

Revision of the

New Hampshire
State Implementation Plan

for the Adoption of Measures to

Opt-Out of the Federal
Reformulated Gasoline Program

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Prepared by

The New Hampshire
Department of Environmental Services



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1.0 Introduction

The State of New Hampshire is submitting this revision to the New Hampshire State Implementation Plan (SIP) to further the State's objectives of opting out of the federal reformulated gasoline (RFG) program and to reduce the threat to State water resources from the gasoline additive methyl tertiary-butyl ether (MtBE). This submittal is made in accordance with the provisions of Section 110 of the federal Clean Air Act (CAA), *Implementation Plans*,¹ and the requirements of 40 CFR Part 51, *Requirements for Preparation, Adoption, and Submittal of Implementation Plans*.²

New Hampshire, along with most Northeast states and many other states throughout the country, has experienced a dramatic increase in the number of public and private water supplies found to be contaminated with (MtBE). Although MtBE has been used in gasoline since the late '70s, the recent increase in its use corresponds to the introduction of the federal RFG program, with its associated higher levels of MtBE, beginning in 1995. Despite undertaking a vigorous and extensive public outreach campaign regarding the proper handling of gasoline, and implementation of one of the most aggressive and successful leaking underground storage tank program in the country, the incidence of contamination of the State's water resources with MtBE continues to rise.

The New Hampshire Department of Environmental Services (DES) believes that the key to reducing the threat from MtBE is to eliminate or dramatically reduce the use of the compound in gasoline supplied to New Hampshire and other Northeast states. However, the federal Clean Air Act (CAA) and associated federal regulations pose serious obstacles to the reduction of MtBE levels in New Hampshire gasoline. Most notably, the CAA minimum 2.0% oxygen (by weight) requirement for RFG (referred to as the "oxygen mandate") results in the use of much higher concentrations of MtBE than in conventional (non-RFG) gasoline. RFG used in New Hampshire and throughout the Northeast typically contains approximately 11% MtBE by volume, which is three to ten times the typical level in conventional gasoline.

New Hampshire's Governor and General Court have recently considered several options for the elimination/reduction of MtBE contamination. In 2001, both determined that a priority preventive measure was to remove the State from the federal RFG program. In March 2001, Governor Shaheen issued Executive Order 2001-02, and shortly thereafter the Legislature passed HB 758 (New Hampshire Revised Statutes Annotated 485:16-b), both of which ordered DES to pursue an opt-out from the federal RFG program (see Attachments 1 and 2, respectively). In an April 2001 letter to EPA Administrator Whitman communicating New Hampshire's intent to opt-out, the Governor also requested that, since a strict interpretation of the applicable federal regulations (i.e., 40 CFR 80.72³) prevents New Hampshire from opting out of the RFG program prior to January 1, 2004, EPA address these regulations to provide for an earlier

¹ See <http://www.epa.gov/oar/caa/caa110.txt>.

² See http://www.access.gpo.gov/nara/cfr/cfrhtml_00/Title_40/40cfr51_00.html.

³ See http://www.access.gpo.gov/nara/cfr/cfrhtml_00/Title_40/40cfr80_00.html.

opt-out date and/or such other relief as may prevent further MtBE contamination of New Hampshire's water resources between now and 2004 (see Attachment 3).

DES responded to this executive and legislative mandate by filing a petition to opt-out of the federal RFG program in May 2001.⁴ In the petition, DES indicated that the strategy to maintain the integrity of New Hampshire's SIP would be to adopt a State-level fuel measure maintaining similar performance standards for gasoline to be distributed and sold in areas where RFG is currently required (see Section 2, *Background*), while eliminating the oxygen mandate. In addition, in December 2001 DES filed a request with EPA for relief from the CAA § 211(c)(4)(A) preemption of state-level rules for fuel components and characteristics already regulated at the federal level (see Attachment 5). This plan will help to prevent further MtBE contamination of the State's water resources.

RFG has been included in certain New Hampshire SIP revisions as a mobile and area source emissions control measure for volatile organic compounds (VOCs), oxides of nitrogen (NO_x), and carbon monoxide (CO). As detailed further below, New Hampshire will replace federal RFG as an ozone season control measure for VOCs and NO_x by adopting rules implementing "Oxygen Flexible Reformulated Gasoline" (OFRFG) that will have similar performance standards and provide the same ozone season VOC and NO_x benefits as the federal RFG program, except that no minimum oxygen content will be required.

2.0 Background

New Hampshire's southern four counties (Merrimack, Hillsborough, Rockingham, and Strafford counties, collectively known as the "four-county area" shown in Appendix A) are designated as nonattainment for the National Ambient Air Quality Standard (NAAQS) for ground level ozone, in accordance with the federal Clean Air Act Amendments of 1990 (CAA). In order to bring the four-county area into attainment with the ozone standard, the State committed to several programs, as required by the CAA, to reduce the emission of ozone precursors. As one of several measures necessary to reduce emissions of VOCs from the mobile source sector (i.e., automobiles, trucks, and other non-stationary sources), New Hampshire voluntarily "opted in" to the RFG program for the four county area, commencing in 1995, to help reduce VOC emissions from the on-highway mobile and nonroad area source categories.

Under authority provided in §211(k)(6) of the federal CAA, New Hampshire petitioned EPA, via a letter from Governor Gregg, to participate in the federal RFG program on October 22, 1991. Notice of EPA's approval of this request was posted in the Federal Register on December 23, 1991 (56 FR 66444). Implementation of the federal RFG program resulted in significant VOC emissions reductions in New Hampshire and helped the State to meet CAA overall reduction targets.

⁴ See Attachment 4 (also at http://www.des.state.nh.us/ard/rfg_optout_053001.pdf.)

The CAA and the federal RFG rule (40 CFR 80 Subpart D⁵) require that gasoline certified as RFG meet certain emissions reduction performance standards for VOCs, NO_x, and toxic compounds. MtBE was originally used as an additive in gasoline in the late '70s to enhance octane and replace lead compounds. The presence of oxygen in gasoline helps older generation vehicles reduce CO emissions. Because MtBE contains oxygen, when certain CO nonattainment areas (e.g., Denver) were required to implement oxygenated fuels programs, MtBE was typically the additive of choice to meet program oxygen content requirements. The additive has favorable blending properties and can be introduced during the refining process, as opposed to certain other oxygen-containing compounds (also referred to as "oxygenates") that must be "splash blended" at the terminal. Conventional (non-RFG) gasoline supplied in the Northeast typically contains between 1 and 5% MtBE by volume, depending on the grade.⁶

In addition, the CAA also requires that federal RFG contain a minimum oxygen content of 2.0% by weight (referred to as the "oxygen mandate"). While MtBE is one of several oxygenates (others include ethanol, TAME, EtBE, DIPE, and TBA), its overall cost-effectiveness makes it the petroleum industry's primary choice of oxygenate for gasoline distributed in the Northeast.⁷ In order to achieve the required minimum level of oxygen (2% by weight), RFG must contain approximately 11% MtBE by volume, which is roughly 3 to 10 times the levels typically blended in conventional gas.

These significantly higher levels of MtBE in RFG distributed in the four-county nonattainment area correlate with an increase in the incidence of MtBE detections, and MtBE concentrations, in public water supplies and other water resources in this area of New Hampshire. While 1.8 to 8.8% of public drinking water supplies in the northern six counties tested for MtBE in 2000 showed detections, 16.8 to 23.2% of the public water supplies in the southern four-county area (where RFG is currently required) tested in 2000 showed detections. In addition, first time detections of MtBE in New Hampshire public water supplies have increased 3 to 4 times, on average, from pre-1995 levels. It is clear that much of the increased threat of MtBE contamination to the State's water supplies since 1995 is linked to the implementation of the federal RFG program. While opting out of the RFG program will not completely eliminate the presence of MtBE in New Hampshire's gasoline, both the Governor and the Legislature have identified it as a priority preventive measure for reducing levels of MtBE in gasoline and the risk of contamination of water resources.

⁵ See http://www.access.gpo.gov/nara/cfr/cfrhtml_00/Title_40/40cfr80_00.html.

⁶ See <http://www.des.state.nh.us/ard/rfgstudy.pdf>.

⁷ DES estimates that MtBE is the primary additive for meeting the oxygen mandate in more than 98% of RFG distributed in the Northeast.

3.0 Legislative Direction and CAA/Regulatory Constraints

Since 1998, New Hampshire's General Court has considered a variety of MtBE/RFG related legislation. Cognizant that bans of either MtBE or RFG had either significant legal implications or potential impacts to price and/or supply of gasoline, the Legislature thus far has avoided such a direction. In the spring of 2001, Governor Shaheen issued Executive Order 2001-02 and the Legislature passed HB 758 (New Hampshire RSA 485:16-b). Both directed DES to prepare and submit all necessary documentation to EPA for New Hampshire to opt-out of the federal RFG program.

In order for New Hampshire to opt-out of the RFG program the State must first demonstrate that it will still be able to achieve the VOC emissions reductions committed to in its EPA approved State Implementation Plan (SIP). These reductions were also assumed in the State's required demonstration that it can attain the ozone NAAQS by 2003. DES has determined that the quickest and most practicable control measure is the replacement of RFG with a similar State rule that achieves equivalent reductions while providing the flexibility to allow for lower MtBE levels. DES adopted such a rule, New Hampshire Code of Administrative Rules, PART Env-A 1611, *Oxygen Flexible Reformulated Gasoline* (OFRFG), on May 2, 2002 (see Attachment 6 for rule and evidence of its adoption).

Additionally, the CAA and associated federal regulations constrain the State's ability to reduce MtBE. CAA Section 211(c)⁸ preempts States from adopting regulations for fuel parameters already regulated at the federal level. However, States with nonattainment areas may seek a waiver from this preemption if they can demonstrate that all other non-fuel measures are not practicable and the fuel measure is necessary for attainment of the NAAQS. Such a demonstration is referred to as a "211(c) waiver".

EPA's RFG "opt-out" regulation (40 CFR 80.72)⁹ requires that New Hampshire remain in the federal RFG program until at least January 1, 2004. In her April 16, 2001 letter to EPA Administrator Whitman communicating the State's intention to opt-out of the RFG program, and in the subsequent May 30, 2001 petition to opt-out, New Hampshire Governor Shaheen also requested that EPA either revise 40 CFR 80.72 or otherwise provide relief such that New Hampshire could opt-out of the RFG program prior to 2004.

In summary, to implement this element of New Hampshire's plan to reduce MtBE contamination in the State, DES must submit three significant documents to EPA:

- A petition to opt-out of the federal RFG program¹⁰ (submitted May 2001)

⁸ Text of federal Clean Air Act section 211(c), see <http://www.epa.gov/oar/caa/caa211.txt>

⁹ Currently, 40 CFR 80.72(c) prohibits states from opting-out of the federal RFG program until January 1, 2004 at the earliest. See http://www.access.gpo.gov/nara/cfr/cfrhtml_00/Title_40/40cfr80_00.html.

¹⁰ See http://www.des.state.nh.us/ard/rfg_optout_053001.pdf.

- An application for relief from § 211(c)(4)(A) of the CAA, the preemption of State regulation of fuels (the “section 211(c) waiver”)¹¹ in accordance with § 211(c)(4)(C) (submitted December 2001),
- This revision of New Hampshire’s State Implementation Plan (SIP), including documentation of adoption of rules, a compliance/enforcement strategy, and a demonstration that the air quality benefits of the OFRFG will maintain the integrity of New Hampshire’s SIP.

The 211(c) waiver demonstrated that a fuel measure was the only reasonable and practicable control measure that New Hampshire could implement to replace the emissions reduction benefits achieved from federal RFG for the 2002 ozone season.

4.0 Demonstration of Equivalence

OFRFG will be required in the same areas of New Hampshire where federal RFG is currently required (i.e., Hillsborough, Merrimack, Rockingham, and Strafford counties), and will – by definition – provide reductions in ozone season VOC and NO_x emissions equivalent to federal RFG. Relative to the State’s use of federal RFG for CO reductions, New Hampshire will demonstrate that new vehicle and fuel standards (including the federal Tier 2 Vehicle/Gasoline Sulfur Rule), coupled with New Hampshire’s fleet turnover, will provide the necessary CO emissions reductions to maintain the integrity of the State’s CO SIP commitments.

New Hampshire’s OFRFG rule was adopted by the Department of Environmental Services on May 2, 2002 pursuant to its rulemaking authority under New Hampshire RSA 125-C:4¹², a copy of which is attached (see Attachment 6). The rule is patterned after the federal RFG program rules (40 CFR Part 80), with certain exceptions for State-specific conditions. The intent of the State rule is to allow the petroleum industry the flexibility to supply gasoline that provides all of the air quality benefits of federal RFG, with reduced levels of MtBE. In order to meet this purpose, the OFRFG rule includes performance standards for metals, toxic compounds, benzene, and wintertime NO_x emissions reductions. These standards are included only for consistency with the current RFG regulations, and are not being submitted for EPA approval. Specifically, New Hampshire is only submitting paragraphs (1) and (2) of Part Env-A 1611(a) for EPA approval into the SIP.

Most importantly, the OFRFG rule eliminates the minimum oxygen requirement. The rule does not regulate oxygen content in any way, nor does it ban MtBE or any other oxygenate. The purpose of not including the oxygen mandate is to provide flexibility to the petroleum industry in reducing MtBE without constraining it in any other way.

¹¹ See http://www.des.state.nh.us/ard/relief_app.pdf.

¹² See <http://gencourt.state.nh.us/ras/html/X/125-C/125-C-4.htm>

The other major difference between federal RFG and OFRFG is that the federal rule allows either refinery average *or* per gallon performance standards, while the State rule allows per gallon standards only. Since there are no petroleum refining facilities in New Hampshire, and because DES has no authority to regulate the industry outside of the State, it is not practicable for a state rule to allow for refinery averaging. DES therefore chose per gallon performance standards equivalent to the per gallon minimum standards established in 40 CFR 80.41(f). In 1997, however, EPA withdrew the NOx per gallon minimum performance standard from this section. DES has thus chosen to use the NOx per gallon minimum standards that were included in the federal RFG rule prior to the 1997 withdrawal (i.e., = 3.0 % for gasoline designated as VOC-controlled, or = -2.5% for gasoline not designated as VOC-controlled.) This measure is necessary to achieve attainment with the ozone NAAQS as described further in section 4.4, below.

Appendix B lists the seven New Hampshire SIP revisions that include RFG as a control measure to achieve federally required emission reductions. Of these, five include RFG as a VOC and/or NOx control measure, and three of these have received final approval from EPA. Two SIP revisions include RFG as a CO control measure to maintain attainment of the federal CO standard, and both of these have received final approval from EPA. The following sections address each of these SIP submittals, describing federal RFG's contribution to the required emission reductions and how OFRFG will provide the same degree of emission reductions as the federal RFG program.

4.1. Previously Approved SIPs with Federal RFG as a VOC Control Measure

Federal RFG is used as a VOC control measure in the following EPA-approved New Hampshire SIP revisions:

- *1996 15% VOC Rate of Progress Plan* (approved December 7, 1998, 63 FR 67405);
- *Stage II Comparability Analysis SIP Revision* (approved September 29, 1999, 64 FR 52434); and
- *Clean Fuel Vehicles SIP Revision* (approved September 29, 1999 64 FR 52434).

By definition, OFRFG will provide reductions in VOC emissions equivalent to federal RFG, so no change from the VOC emission reduction values in the existing SIP revisions is expected. OFRFG will be required in the same areas of New Hampshire that federal RFG is currently required (i.e., Hillsborough, Merrimack, Rockingham, and Strafford counties).

4.2. Previously Approved SIPs with Federal RFG as a CO Control Measure

Federal RFG is referenced as part of New Hampshire's demonstration that the Manchester and Nashua areas will continue to maintain attainment of the National

Ambient Air Quality Standard (NAAQS) for CO, as outlined in the following maintenance plan SIP revisions:

- *Redesignation to Attainment for CO in Manchester, NH* (approved November 29, 2000, 65 FR 71060); and
- *Redesignation to Attainment for CO in Nashua, NH* (approved November 29, 2000, 65 FR 71060).

While some CO benefits are associated with the use of federal RFG in older vehicles, the Manchester and Nashua areas have monitored attainment with the CO NAAQS since 1990 (i.e., five years before the federal RFG program was implemented in New Hampshire). Federal RFG was clearly not necessary to attain the CO standard in these areas, and is not necessary to continue to maintain attainment of the CO NAAQS in the future.

The approved SIP revisions for redesignation of the Manchester and Nashua areas included demonstrations that total projected CO emissions from on-road mobile, off-road area, and stationary point and area inventory source categories would not exceed the 1990 base year emissions (1990 is also the initial attainment year). Of these four source categories, only the on-road mobile source and off-road area source categories would be impacted by the discontinuation of the RFG program.

Since the submission and approval of the redesignation SIP revisions for Manchester and Nashua, new models for emissions projections in both of these source categories have been developed and released by EPA. The MOBILE 6 model for estimating on-road mobile source emissions was released in January 2002, replacing MOBILE 5b. The NONROAD model, issued in draft form in 2000, is used for estimating emissions from off-road mobile sources such as construction equipment, commercial and residential yard equipment (lawn and garden, snow blowers, etc.), and recreational vehicles (motorcycles, snowmobiles, etc.). Although the draft NONROAD model is not specifically approved by EPA for use in SIP submittals, it is the best estimation tool for this source category currently available, and EPA has previously approved submittals from other States based on this model.

For on-road mobile source emissions, DES used the MOBILE 6 model to estimate emissions for the 1990 base (attainment) year and for the years 2003, 2010, and 2020. Mobile source CO emissions from motor vehicles in both Manchester and Nashua are projected to decrease significantly from the base year inventory, based on the MOBILE 6 projections (MOBILE 6 input and output files are attached in Appendix C.) Off-road mobile source emissions were projected for the same years using the draft NONROAD model (scenario and output files are attached in Appendix D.) CO exhaust emissions were modeled for Hillsborough County and apportioned to Manchester and Nashua on a population basis.

Tables 1 and 2, on the following page, summarize the emissions for these two source categories in Manchester and Nashua for the years analyzed in the redesignation

SIP revisions (2003, 2010, and 2020). Mobile source emissions are significantly reduced even without RFG, due to the technology enhancements required by the federal Tier I and Tier II vehicle emissions standards effective in 1994 and 2004, respectively. Non-road emissions without RFG increase only slightly in comparison to those with RFG. The net result, displayed in the final column of the tables, shows overall CO emissions reductions of between 30 and 60 tons per winter day in Manchester, and between 20 and 50 tons per winter day in Nashua if RFG use was discontinued. It is not expected that the replacement of the federal RFG program with New Hampshire's OFRFG rule will completely eliminate the CO benefits of the federal program. However, this analysis does not include any CO benefit (as compared to the CO benefit of federal RFG as predicted by the MOBILE 6 model) that would come from implementation of OFRFG. Therefore, the integrity of the New Hampshire CO redesignation SIPs is maintained.

Table 1. Projected On-road and Off-road Mobile Source CO Emissions for Manchester

Year	Population		Winter CO Emissions, tons per winter day					
	Hillsborough County	Manchester	On-road		Off-road			D _{total} ($\Delta_1 + \Delta_2$)
			w/o RFG	Δ_1 (from base year)	w/ RFG	w/o RFG	Δ_2	
1990	336,073	99,567	99.18	-	-	16.9	-	-
2003	390,438	108,478	61.50	-37.68	18.8	20.1	+1.3	-36.38
2010	414,763	111,921	43.55	-55.63	20.7	22.1	+1.4	-54.23
2020	466,967	116,020	38.35	-60.83	22.4	24.0	+1.6	-59.23

Table 2. Projected On-road and Off-road Mobile Source CO Emissions for Nashua

Year	Population		Winter CO Emissions, tons per winter day					
	Hillsborough County	Nashua	On-road		Off-road			D _{total} ($\Delta_1 + \Delta_2$)
			w/o RFG	Δ_1 (from base year)	w/ RFG	w/o RFG	Δ_2	
1990	336,073	79,662	86.83	-	-	13.6	-	-
2003	390,438	85,940	58.86	-27.97	14.9	15.9	+1.0	-26.97
2010	414,763	87,997	42.61	-44.22	16.3	17.4	+1.1	-43.12
2020	466,967	91,145	36.49	-50.34	17.6	18.9	+1.3	-49.04

4.3. New Hampshire Post-1996 Reasonable Further Progress Plan SIP Revision

Federal RFG is used as a VOC control measure in New Hampshire's *Post-1996 Reasonable Further Progress Plan SIP Revision*. EPA approval of this SIP revision is currently pending. New Hampshire does not intend to withdraw this SIP revision. However, because opting out of the federal RFG program could affect both the administrative completeness and the ultimate approval of this SIP revision, the State has replaced federal RFG as a VOC control measure by adopting rules to implement OFRFG that provide VOC emissions reductions equivalent to those achieved by federal RFG. As a result, no change from the VOC emission reduction values in the pending SIP revision

is expected. As noted above, OFRFG will be required, pending approval of this SIP revision, in the same areas of New Hampshire that federal RFG is currently required (i.e., Hillsborough, Merrimack, Rockingham, and Strafford counties).

4.4. New Hampshire 2003 Ozone Attainment Demonstration SIP Revision

Federal RFG is used as an ozone season control measure for VOCs and NO_x in New Hampshire's 2003 *Ozone Attainment Demonstration SIP Revision*. Specifically, the photochemical modeling conducted to demonstrate attainment in this SIP revision assumed that federal RFG would be required in New Hampshire's four-county nonattainment area. EPA approval of this SIP revision is currently pending. New Hampshire does not intend to withdraw this SIP revision. However, because opting out of the federal RFG program could affect both the administrative completeness and the ultimate approval of this SIP revision, New Hampshire has replaced federal RFG as a VOC and NO_x control measure by adopting rules to implement OFRFG that provide VOC and NO_x emissions reductions equivalent to those achieved by federal RFG. As a result, no change from the VOC and NO_x emission reduction values in the pending SIP revision is expected. Again, OFRFG will be required in the same areas of New Hampshire that federal RFG is currently required (i.e., Hillsborough, Merrimack, Rockingham, and Strafford counties).

5.0 Compliance and Enforcement

Enforcement of the gasoline standards in Env-A 1611 is the responsibility of the Department of Environmental Services. DES authority for enforcement of its rules is found in New Hampshire Revised Statutes Annotated (RSA) Chapter 125-C:6, *Powers and Duties of the Commissioner* and 125-C:15, *Enforcement*.¹³ DES intends to conduct routine random sampling on both a scheduled and unscheduled basis at retail gasoline distribution facilities throughout the four-county area. Monitoring at the retail level is necessary as the wholesale storage and distribution of gasoline other than OFRFG (i.e., conventional, Maine Low RVP, etc.) in the covered area is not prohibited by the State rule.

The DES monitoring and enforcement program will be conducted in conjunction with compliance activities for other DES programs directed at gasoline distribution facilities, such as underground storage tank inspections and/or Stage II vapor recovery testing and inspections. Samples will be field tested for gasoline parameters necessary to run the Complex model¹⁴ found at 40 CFR 80.45 with the PetroSpec GS-1000. Samples that do not meet the performance standards for OFRFG contained in Env-A 1611 will be submitted to a gasoline-testing laboratory for confirmation tests for enforcement purposes in accordance with the testing methods at 40 CFR 80.46.¹⁵ In addition, approximately

¹³ See <http://www.gencourt.state.nh.us/rsa/html/X/125-C/125-C-6.htm> and <http://www.gencourt.state.nh.us/rsa/html/X/125-C/125-C-15.htm>.

¹⁴ See http://www.access.gpo.gov/nara/cfr/cfrhtml/00/Title_40/40cfr80_00.html

¹⁵ See http://www.access.gpo.gov/nara/cfr/cfrhtml/00/Title_40/40cfr80_00.html

5% of all samples will be submitted for laboratory confirmation analysis as a quality assurance procedure.

It is anticipated that DES compliance staff will take approximately 200 gasoline samples from approximately 100 facilities (representing 25% of the total facilities in the covered area) annually. The estimated cost of this program, including inspection labor, laboratory analytical costs, petroleum sample screening equipment, and legal support is anticipated to be approximately \$75,000 in the first year and \$25,000 annually thereafter.

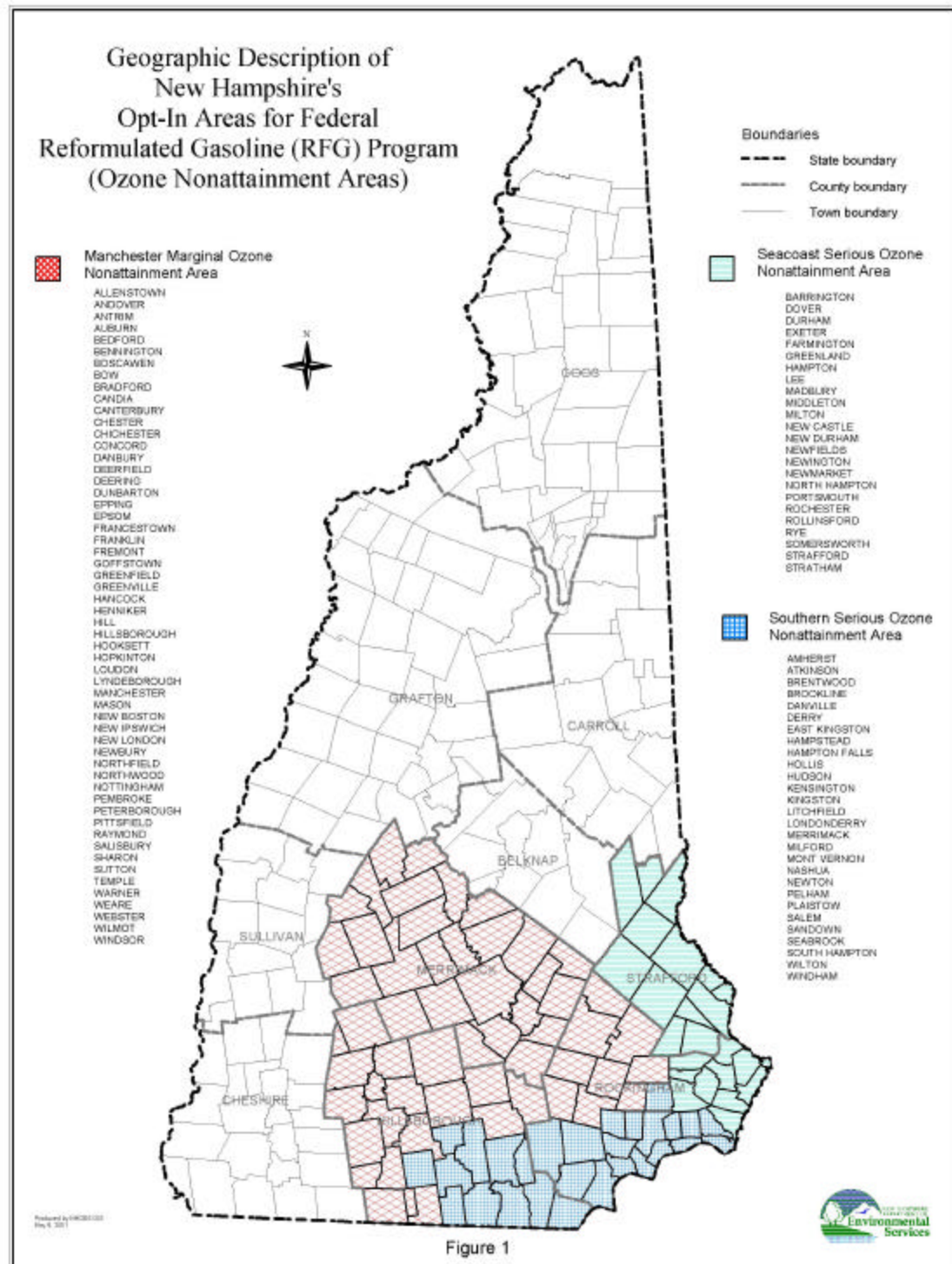
Upon confirmation, non-compliant sampling results will be referred for appropriate enforcement action in accordance with the procedures in RSA 125-C:15.

6.0 Administrative Materials

This SIP revision submittal addresses the replacement of the federal RFG program with state rule Env-A 1611, *Oxygen-Flexible Reformulated Gasoline*, describes how the state rule will be enforced, and demonstrates its equivalency with the federal RFG program in terms of its impact on the New Hampshire SIP. Public comment periods and hearings were held on the rule and on this SIP revision submittal. The evidence that the rule was adopted in accordance with New Hampshire law and 40 CFR 51, Appendix V, is included in Attachment 6. The evidence that the required public notice was given for the comment period and hearing on the SIP revision submittal is provided in Attachment 7. The certification that the public hearing on the SIP revision submittal was held is provided in Attachment 8, and the compilation of public comments and DES's response thereto is found in Attachment 9.

APPENDIX A.

New Hampshire's Opt-In Areas for Federal RFG



APPENDIX B.

Revisions to New Hampshire's State Implementation Plan Which Rely Upon Federal RFG as a Control Measure

State Implementation Plan (SIP) Revision	Submission Date	EPA Approval Status	Federal Register Notice
New Hampshire 1996 15% VOC Rate of Progress Plan	Submitted to EPA August 29, 1996	Approved by EPA December 7, 1998	63 FR 67405
New Hampshire Stage II Comparability Analysis	Submitted to EPA April 30, 1998	Approved by EPA September 29, 1999	64 FR 52434
New Hampshire Clean Fuel Vehicles SIP	Submitted to EPA June 7, 1994	Approved by EPA September 29, 1999	64 FR 52434
Carbon Monoxide (CO) SIP Revision Redesignation to Attainment for CO in Manchester, NH	Submitted to EPA December 11, 1998	Approved by EPA November 29, 2000	65 FR 71060
Carbon Monoxide (CO) SIP Revision Redesignation to Attainment for CO in Nashua, NH	Submitted to EPA November 30, 1998	Approved by EPA November 29, 2000	65 FR 71060
New Hampshire Post – 1996 Reasonable Further Progress Plan	Submitted to EPA September 27, 1996	EPA approval is <u>pending</u> . EPA found that the submittal was complete on October 9, 1996. New Hampshire fulfilled its obligations under the Clean Air Act Section 182(c)(2)(B) with the State's submittal on September 27, 1996.	n/a
New Hampshire 2003 Ozone Attainment Demonstration	Phase I submitted to EPA June 2, 1995; found complete by EPA December 2, 1995 Phase II submitted to EPA June 30, 1998	EPA approval is <u>pending</u> . New Hampshire fulfilled its obligations under the Clean Air Act Section 182(c)(2)(A) with the State's submittals on June 2, 1995 and June 30, 1998.	n/a

APPENDIX C.

MOBILE 6 Model Input and Output Files

APPENDIX D.

NONROAD Model Scenario and Output Files

ATTACHMENT 1

Executive Order 2001-02

EXECUTIVE ORDER 2001-02

An order pertaining to reducing water contamination resulting from the use of Methyl tertiary Butyl Ether (MTBE) in Reformulated Gasoline

WHEREAS, MTBE has become a significant and rapidly increasing contamination threat to groundwater and surface water resources in the State of New Hampshire; and

WHEREAS, 16% of New Hampshire's public water supplies have some level of MTBE contamination; and

WHEREAS, 27% of the private well samples analyzed for MTBE by the Department of Environmental Services' laboratory in the year 2000 had some level of MTBE and 4% had MTBE concentration in excess of the State's drinking water standard of 13 ppb; and

WHEREAS, a study conducted by the Department of Environmental Services found MTBE in all gasoline across the state, at levels up to 12.4%, and that other oxygenates with similar characteristics to MTBE were found in all ten counties, with levels up to 5.5%; and

WHEREAS, MTBE is considered a potential human carcinogen at high doses by the U.S. Environmental Protection Agency; and

WHEREAS, due to its high solubility in water and its ability to move quickly through groundwater, MTBE from leaking storage tanks and spills tends to move further than other components of gasoline and is more difficult to remediate; and

WHEREAS, MTBE does not break down as rapidly as other gasoline constituents once released into the environment; and

WHEREAS, the State of New Hampshire and its citizens and businesses are incurring significant costs to deal with the increasing presence of MTBE contamination, namely in undertaking remedial steps to remove the threat of continuing contamination at individual sites, providing alternative drinking water supplies to homes affected by MTBE contamination, and substantially increasing staff time spent on MTBE contaminated sites and related issues; and

WHEREAS, the State of New Hampshire has aggressively pursued all available, legal options to reduce the concentration of MTBE in gasoline sold in the State and the threat posed by MTBE contamination in its water resources, including:

- Initiating exhaustive assessments of MTBE and a task force to seek a regional gasoline solution; working with dealers to promote cleaner marine engines; and helping to launch a national public education program regarding the proper handling and disposal of gasoline;
- Conducting one of the strongest underground storage tank replacement programs in the country, achieving a compliance rate of over 99 percent;

- Establishing a new safe drinking water standard for MTBE of 13 parts per billion, the most protective primary drinking water standard in the country; and
- Formally requesting relief from federal requirements; and

WHEREAS, MTBE was added to gasoline in the mid-1970s to help replace lead because it added octane and improved combustion in gasoline engines, resulting in cleaner emissions; and

WHEREAS, Title I of the federal Clean Air Act Amendments of 1990 (CAA) mandated significant emission reductions from New Hampshire's ozone nonattainment areas (i.e., Hillsborough, Merrimack, Rockingham, and Strafford counties), and in order to help satisfy these requirements, in 1991 New Hampshire decided - by opting in to the federal Reformulated Gasoline (RFG) program - to require cleaner-burning gasoline in these counties starting in 1995; and

WHEREAS, because the CAA expressly mandates the oxygen content of RFG, requiring that it have at least 2% oxygen by weight, RFG contains approximately 11% MTBE by volume - five to ten times the amount historically found in gasoline in the Northeast; and

WHEREAS, because the ability of states to regulate the properties and composition of gasoline - including its oxygen content - is expressly limited by the CAA, state action to ban MTBE is unlikely to withstand legal challenge; and

WHEREAS, even if MTBE were eliminated, the CAA oxygen mandate would still force New Hampshire to use other oxygenates - such as ethanol - that are not readily available, could lead to unacceptable price and supply impacts, and need to be analyzed to ensure that we understand public health and environmental issues associated with these alternatives; and

WHEREAS, despite these and other actions, the number of MTBE detections in the State's water resources continues to rise, and despite the State's vigorous efforts to advance federal legislation to eliminate the CAA oxygen mandate, neither Congress nor the U.S. Environmental Protection Agency appear likely to address this problem in the foreseeable future; and

WHEREAS, the only remaining option available to the State of New Hampshire is to opt out of the federal RFG program and to make up for the emission reductions that RFG provides by adopting other emission control measures; and

WHEREAS, the air quality benefits that have been achieved through the RFG program should be maintained, and diminishing or "backsliding" from these air quality benefits is unacceptable from the standpoint of public health; and

WHEREAS, protection of New Hampshire's economic well-being, natural environment, public health, and quality of life demands that the State's air and water quality be enhanced simultaneously, rather than treated as mutually exclusive goals;

NOW, THEREFORE, I, JEANNE SHAHEEN, GOVERNOR of the State of New Hampshire, by the authority vested in me pursuant to Part II, Article 41 of the New Hampshire Constitution, do hereby order and direct the Department of Environmental Services (DES) to prepare and submit to the U.S. Environmental Protection Agency the documentation necessary for New Hampshire to opt-out of the federal Reformulated Gasoline program immediately, pursuant to my request that the Administrator of the U.S. Environmental Protection Agency revise the Code of Federal Regulations Title 40, Part 80, Subpart D, Section 80.72(c) to allow for an accelerated opt-out of the federal Reformulated Gasoline program; and

FURTHERMORE, I order and direct DES to work with the New Hampshire General Court to adopt in this legislative session any provision necessary to accomplish this goal, including control measures sufficient to replace the emission reduction benefits achieved by RFG, to provide adequate funding and statutory flexibility for remediation of MTBE-contaminated sites and water resources by extending the sunset date of the Oil Discharge and Cleanup Fund to January 1, 2010, and increasing the reimbursable limit of that fund from \$1 million to \$1.5 million for MTBE (and other petroleum) contaminated sites; and

FURTHERMORE, I order and direct DES to continue to promote and participate in efforts to develop acceptable regional or federal approaches to reduce the threat of MTBE contamination, including but not limited to elimination of the oxygen mandate, waivers from federal fuel requirements, cleaner reformulations of fuels, and other such measures; and

FURTHERMORE, I order and direct DES to analyze and transmit to my office and the General Court, the results of any state, regional or national studies on the environmental fate and transport of ethanol in air, surface water and groundwater, to ensure a full understanding of the potential environmental and public health consequences of ethanol as an alternative to MTBE; and

FURTHERMORE, I order and direct DES to analyze and transmit to my office the results of litigation concerning MTBE, and to recommend any actions which, based on the outcome of the litigation, may allow the State to better address the issue of MTBE contamination; and

FURTHERMORE, I order and direct DES to take all reasonable steps to encourage the federal government to appropriate adequate funding to states for the costs incurred to remediate MTBE-contaminated sites and water resources and to prevent future contamination.

Given at the Executive Chamber in Concord, this sixteenth day of April, two thousand one.

GOVERNOR OF NEW HAMPSHIRE

[Governor Jeanne Shaheen](#)

ATTACHMENT 2

New Hampshire Revised Statutes Annotated 485:16-b

TITLE L

WATER MANAGEMENT AND PROTECTION

CHAPTER 485

NEW HAMPSHIRE SAFE DRINKING WATER ACT

Methyl Tertiary Butyl Ether (MTBE)

Section 485:16-b

485:16-b Authority to Limit MTBE in Gasoline; Penalties. –

I. Except as provided for in RSA 485:16-d, the commissioner shall seek all necessary authorizations from the Environmental Protection Agency to opt out of the federal reformulated gasoline program as soon as possible, but in no case later than January 1, 2004. The department of environmental services shall prepare and submit to the Environmental Protection Agency as soon as possible, but in no case later than January 1, 2002, all documentation necessary to accomplish this task.

II. In addition to the provisions of paragraph I, the commissioner, after consultation with the commissioner of health and human services, shall limit to the greatest extent practicable, with the approval of the governor and council, the concentration of MTBE allowed in any gasoline sold in all or part of the state after first holding a public hearing on the issue and certifying to the air pollution advisory committee established in RSA 125-J:11 that gasolines which meet such limit are:

- (a) Readily available to New Hampshire consumers at a reasonable price;
- (b) Less hazardous overall to humans and the environment than gasoline having higher MTBE concentrations taking into account all exposure routes, including air and water; and
- (c) Approved for use in New Hampshire by the Environmental Protection Agency without a requirement to substitute additional air emissions reductions beyond those adopted under RSA 485:16-c.

III. Nothing in this section shall prohibit the commissioner from phasing in any limitations approved under paragraph II.

IV. Retail sellers of gasoline and the suppliers to such retail sellers shall comply with the provisions of paragraph II or be subject to the enforcement provisions of RSA 485:58.

V. The limitations on MTBE concentrations established under the provisions of this section shall be exempt from the requirements of RSA 541-A, the administrative procedure act. The department shall file, however, in the office of legislative services a copy of all rules adopted, amended, or repealed under this section by the department.

Source. 1999, 313:2, eff. July 16, 1999. 2001, 293:2, eff. July 17, 2001.

ATTACHMENT 3

**April 16, 2001 Letter from Governor Shaheen to EPA
Administrator Whitman**



JEANNE SHAHEEN
GOVERNOR

STATE OF NEW HAMPSHIRE

OFFICE OF THE GOVERNOR

April 16, 2001

The Honorable Christine Todd Whitman
Administrator
U.S. Environmental Protection Agency
Ariel Rios Federal Building
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Re: Intent to Opt Out of the Federal Reformulated Gasoline Program

Dear Administrator Whitman:

I write to make you aware of my decision that the State of New Hampshire must seek withdrawal from the federal Reformulated Gasoline (RFG) program immediately. Therefore, I ask the U.S. Environmental Protection Agency (EPA) to promptly address its procedures for states opting out of the RFG program (40 CFR 80.72) to allow a much sooner effective date than January 1, 2004. I am taking this action because it appears to represent the only rational, and legal, approach available to the State at this time to sharply reduce the levels of methyl tertiary-butyl ether (MTBE) in gasoline supplied to New Hampshire.

As you know, MTBE is a significant and rapidly increasing threat to New Hampshire's groundwater and surface water resources. MTBE is difficult and expensive to remediate because of its high solubility and its ability to move quickly through groundwater. Because MTBE travels farther in groundwater and does not break down rapidly, it can be difficult to pinpoint the source of the contamination. MTBE has been detected in public drinking water supplies and in private wells, and its remediation is consuming a disproportionately large percentage of the funds we have set aside for all petroleum contamination needs.

New Hampshire is particularly frustrated with existing federal barriers that prevent states from readily and effectively reducing or phasing-out the use of MTBE in gasoline. The federal Clean Air Act essentially prohibits states from controlling individual components of gasoline, and it expressly mandates the oxygen content of RFG. Refiners in the east blend MTBE in RFG – in concentrations 5-10 times greater than conventional gasoline – because it is the most cost-effective alternative for meeting this mandate. Because the federal Clean Air Act and its associated regulations provide states with virtually no authority to reduce MTBE in gasoline, states that use RFG are essentially compelled to contaminate their precious water resources. This is an unacceptable situation.

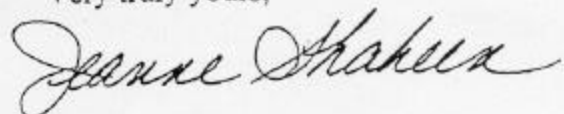
From the time we first recognized this problem, it has been clear that there are no simple solutions. As a result, on behalf of the New England Governors, I asked the Northeast States for Coordinated Air Use Management (NESCAUM) to thoroughly study the issues and options surrounding RFG and MTBE. Soon after, EPA's National Blue Ribbon Panel on MTBE was launched. The work products of both of these initiatives – NESCAUM's *RFG/MTBE Findings and Recommendations* and the *Blue Ribbon Panel Findings and Recommendations on the Use of Oxygenates in Gasoline* recommended elimination of the oxygenate mandate from the Clean Air Act. The MTBE problem requires a federal solution, but Congress has made little progress to date and no federal solution appears imminent.

As a result, the State of New Hampshire is forced to pursue the only legal, rational option that exists for reducing MTBE in gasoline: to opt out of the federal RFG program. I have thus directed the New Hampshire Department of Environmental Services (DES) to immediately inform EPA Region I of this action, to promptly consult with EPA's regional office to establish the requirements necessary to implement this action, and to expeditiously fulfill those requirements. Since I understand that a strict interpretation of the applicable federal regulations (i.e., 40 CFR 80) prevents New Hampshire from opting out of the RFG program prior to January 1, 2004, I further request that EPA address these regulations to provide for an earlier opt out date and/or such other relief as may prevent further MTBE contamination of New Hampshire's water resources between now and 2004.

As a former governor, I am sure you understand the economic and environmental importance of solving the problem of MTBE contamination. From your experience as Governor, you are also aware of the aggressive steps states have taken to replace underground fuel tanks and educate consumers regarding spill prevention and the proper handling of gasoline. Given the volume of gasoline distributed, however, it is ultimately unreasonable to expect that there will be no releases, even with the most diligent gasoline handling. The pollution prevention and source reduction approaches that the states have found to be extraordinarily effective advise us to reduce, and eventually eliminate, the use of MTBE as a gasoline additive in the first place.

I look forward to working with you so that New Hampshire can eliminate the risks posed to our groundwater resources by MtBE in the near future. Should you have any questions, please feel free to contact me or DES Commissioner Robert W. Varney at your convenience.

Very truly yours,



Jeanne Shaheen

cc: Ira Leighton, Acting Regional Administrator
Robert W. Varney, DES Commissioner

ATTACHMENT 4

***Petition to Opt New Hampshire Out of the Federal
Reformulated Gasoline Program***



**State of New Hampshire
DEPARTMENT OF ENVIRONMENTAL SERVICES**

6 Hazen Drive, P.O. Box 95, Concord, NH 03302-0095
(603) 271-1370 FAX (603) 271-1381



Petition to Opt New Hampshire Out
of the Federal Reformulated Gasoline Program

New Hampshire Governor Jeanne Shaheen wrote to U.S. Environmental Protection Agency (EPA) Administrator Christine Todd Whitman on April 16, 2001 conveying the intent of the State of New Hampshire to opt out of the federal Reformulated Gasoline (RFG) program. Significant quantities of oxygenating compounds are required to be present in gasoline under the federal RFG program. Since the federal RFG program commenced in 1995, the oxygenate methyl tertiary-butyl ether (MtBE), has become a significant contamination threat to New Hampshire's groundwater and surface water resources. Existing federal statutory and regulatory barriers to reducing and/or phasing-out the use of MtBE leave states with few constructive options to rectify this environmental and public health problem. New Hampshire has enjoyed the notable air quality benefits of the federal RFG program, and would like to maintain its contribution to air quality. At this point, however, there appears to be no effective, legal route by which New Hampshire can address the MtBE problem except to opt out of the federal RFG program.

MtBE is the additive most often used by petroleum refiners serving the Northeast to meet the federal Clean Air Act (CAA) §211k(2)(B) requirement that RFG contain 2.0 percent oxygen by weight (i.e., the "oxygen mandate"). Since the MtBE problem originated with this statutory provision, the best resolution is Congressional action to repeal the oxygenate mandate. Having invested considerable effort and resources pursuing such action over the last two years, however, New Hampshire is concerned that Congressional action to address the underlying origin of the MtBE problem may not happen in the near future. Faced with no other viable, effective, or legal alternative under the federal Clean Air Act to reduce or eliminate MtBE concentrations in New Hampshire's gasoline, the State is compelled to submit this formal petition to opt out of the federal RFG program.

Under authority provided in §211(k)(6) of the federal Clean Air Act, New Hampshire petitioned EPA to participate in the federal RFG program on October 22, 1991. Notice of EPA's approval of this request was posted in the Federal Register on December 23, 1991 (56 FR 66444). The State of New Hampshire, in accordance with the procedures outlined 40 CFR 80.72, now hereby petitions EPA to opt out of the federal RFG program and to remove all New Hampshire counties from the list of "covered areas" delineated in 40 CFR 80.70. Upon approval of this petition by EPA, the four-county area in New Hampshire where federal RFG is currently required (specifically Hillsborough, Merrimack, Rockingham, and Strafford counties, as shown in Attachment 1) will no longer be subject to the requirements of the federal Clean Air Act Section 211(k) and the federal RFG rule (40 CFR Part 80) for gasoline supplied and sold in those areas, including the specification that such gasoline contain 2% oxygen by weight.

Based on a review of the applicable statutory provisions and EPA's RFG rule, as well as discussions with EPA's regional staff, New Hampshire understands that the submissions required for EPA approval of the State's request to opt out of the RFG program include:

- A formal opt out request pursuant to 40 CFR 80.72, including a list of all prior State Implementation Plan (SIP) submittals which utilize federal RFG emission reduction benefits – benefits that must be replaced upon eliminating federal RFG in New Hampshire;
- SIP revisions containing the state rules promulgated to replace the emission reductions benefits provided by federal RFG; and
- A request for a waiver of CAA §211(c)(4)(A), pursuant to §211(c)(4)(C), in order to adopt a state control measure that affects federally regulated fuels or fuel component.

This document is the formal request to opt out of the federal RFG program, and it outlines all New Hampshire SIP submittals that use RFG emission benefits to satisfy federal emission reduction requirements. It also describes New Hampshire's plans for satisfying those requirements via other means. The New Hampshire Department of Environmental Services (DES) has initiated expedited rulemaking procedures to enact replacement emissions reductions and is preparing the necessary SIP amendments.

RFG has been included in certain New Hampshire SIP revisions as a mobile source emissions control measure for volatile organic compounds (VOCs), nitrogen oxides (NO_x), and carbon monoxide (CO). Attachment 2 lists these SIP revisions and their approval status at EPA. As detailed further below, New Hampshire will replace federal RFG as a VOC and/or NO_x control measure by adopting rules implementing "Oxy-Free Reformulated Gasoline" (OFRFG) that will be substantively identical to federal RFG, except that no minimum oxygen content will be required.

New Hampshire's §211(c)(4)(A) waiver request will be submitted concurrent with the State's SIP modifications in order to enact state rules on OFRFG. At the present time, New Hampshire's ozone nonattainment areas have achieved "clean data" status, where three-year average monitored ozone concentrations are consistent with the National Ambient Air Quality Standard (NAAQS). The State of New Hampshire believes that the mobile source VOC and NO_x benefits of federal RFG have contributed to this achievement, and that these fuel-related air quality benefits must be retained in order to meet the ozone NAAQS on a going-forward basis. New Hampshire's approach of substituting OFRFG for federal RFG retains these benefits, simplifies the demonstration of equivalency with RFG, can be more readily implemented than other control measures, and should accommodate timely approval of this petition.

The CAA and the federal RFG rule in 40 CFR 80.41 impose requirements on refiners that RFG meet a complex combination of specifications and emissions reduction performance standards for VOCs and NO_x. OFRFG will be adopted as a state rule that will incorporate by reference applicable federal RFG requirements, except for the oxygen requirement. New Hampshire recognizes that to the extent that OFRFG is equivalent to federal RFG, OFRFG may also result in lower toxic emissions. However, the State believes that maximizing the similarity

between OFRFG and federal RFG will provide greater consistency with respect to recently adopted federal regulations relative to gasoline toxics and in refiners' production processes, resulting in lower costs.

New Hampshire's plans for OFRFG are consistent with the findings and recommendations of EPA's independent Blue Ribbon Panel on the use of oxygenates in gasoline, which recommended elimination of the minimum oxygen requirement for federal RFG. This position was supported by EPA and the American Petroleum Institute, both of which were represented on the panel. DES anticipates that refiners serving New Hampshire will seek to reduce MtBE levels for both environmental and economic reasons. MtBE is one of the most expensive components of gasoline, so refiners may reduce MtBE levels simply to reduce costs. In addition, since MtBE poses such a threat to water resources, it increases the potential environmental liability claims that refiners, distributors, and retailers face.

Appropriate testing, certification, and enforcement procedures for OFRFG will be adopted as necessary after consultation with EPA's regional staff. In combination, these steps will ensure that OFRFG provides the air quality benefits necessary to meet federal emission reduction requirements and the commitments reflected in the cited New Hampshire SIP revisions.

OFRFG will be required in the same areas of New Hampshire where federal RFG is currently required (i.e., Hillsborough, Merrimack, Rockingham, and Strafford counties), and will – by definition – provide reductions in VOC and NO_x emissions equivalent to federal RFG. Relative to the State's use of federal RFG for CO reductions, New Hampshire will demonstrate that new vehicle and fuel standards (including the federal Tier 2 Vehicle/Gasoline Sulfur Rule), coupled with New Hampshire's fleet turnover, will provide the necessary CO emissions reductions to maintain the integrity of the State's CO SIP commitments.

Attachment 2 shows that New Hampshire has seven SIP revisions that use RFG as a control measure to achieve federally required emission reductions. Of these, five include RFG as a VOC and/or NO_x control measure, and three of these have received final approval from EPA. Two SIP revisions include RFG as a CO control measure to maintain attainment of the federal CO standard, and both of these have received final approval from EPA. The following sections address each of these SIP submittals, describing RFG's contribution to the required emission reductions and how OFRFG will provide the same degree of emission reductions as the federal RFG program.

Approved SIP Revisions Which Include Federal RFG as a VOC Control Measure

Federal RFG is used as a VOC control measure in the following EPA-approved New Hampshire SIP revisions:

- *1996 15% VOC Rate of Progress Plan* (approved December 7, 1998, 63 FR 67405);
- *Stage II Comparability Analysis SIP Revision* (approved September 29, 1999, 64 FR 52434); and

- *Clean Fuel Vehicles SIP Revision* (approved September 29, 1999 64 FR 52434).

To replace federal RFG as a VOC control measure in these SIP revisions, DES will adopt rules implementing OFRFG. By definition, OFRFG will provide reductions in VOC emissions equivalent to federal RFG, so no change from the VOC emission reduction values in the existing SIP revisions is expected. OFRFG will be required in the same areas of New Hampshire that federal RFG is currently required (i.e., Hillsborough, Merrimack, Rockingham, and Strafford counties). Upon final adoption of its OFRFG rules, DES will submit corresponding modifications to these currently approved SIP revisions. Using an expedited process, DES intends to complete this rulemaking within 60 days.

Approved SIP Revisions Which Include Federal RFG as a CO Control Measure

Federal RFG is referenced as part of New Hampshire's demonstration that the Manchester and Nashua areas will continue to maintain attainment of the National Ambient Air Quality Standard (NAAQS) for CO, as outlined in the following maintenance plan SIP revisions:

- *Redesignation to Attainment for CO in Manchester, NH* (approved November 29, 2000, 65 FR 71060); and
- *Redesignation to Attainment for CO in Nashua, NH* (approved November 29, 2000, 65 FR 71060).

While some CO benefits are associated with the use of federal RFG in older vehicles, the Manchester and Nashua areas have monitored attainment with the CO NAAQS since 1990 (i.e., five years before the federal RFG program was implemented in New Hampshire). Federal RFG was clearly not necessary to attain the CO standard in these areas, and is not necessary to continue to maintain compliance with the CO NAAQS in the future. New Hampshire will submit revisions to these approved SIP provisions demonstrating that fleet turnover and new federal vehicle and fuel standards will provide adequate CO emissions reduction benefits to maintain the integrity of the State's CO SIP commitments. DES will work with EPA regional staff and CO modeling staff at the New Hampshire Department of Transportation to determine how best to make this demonstration, and to expeditiously follow through with all necessary submittals to correspondingly modify New Hampshire's currently approved CO SIP revisions. The timeframe for this process depends on the availability of EPA regional staff, but is anticipated to proceed expeditiously.

New Hampshire Post-1996 Reasonable Further Progress Plan SIP Revision

Federal RFG is used as a VOC control measure in New Hampshire's *Post-1996 Reasonable Further Progress Plan SIP Revision*. EPA approval of this SIP revision is currently pending. New Hampshire does not intend to withdraw this SIP revision. However, because opting out of the federal RFG program could affect both the administrative completeness and the ultimate approval of this SIP revision, the State will replace federal RFG as a VOC control measure by adopting rules to implement a OFRFG that will provide VOC emissions reductions equivalent to those achieved by federal RFG. As a result, no change from the VOC emission reduction values in the pending SIP revision is expected. As noted above, OFRFG will be

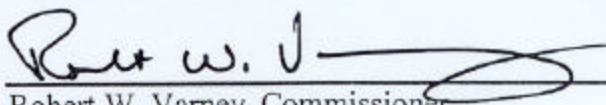
required in the same areas of New Hampshire that federal RFG is currently required (i.e., Hillsborough, Merrimack, Rockingham, and Strafford counties). Also as noted above, upon final adoption of its OFRFG rules, DES will submit a corresponding modification to this currently pending SIP revision. Using an expedited process, DES intends to complete this rulemaking within 60 days.

New Hampshire 2003 Ozone Attainment Demonstration SIP Revision

Federal RFG is used as a VOC and NOx control measure in New Hampshire's 2003 *Ozone Attainment Demonstration SIP Revision*. Specifically, the photochemical modeling conducted to demonstrate attainment in this SIP revision assumed that federal RFG would be required in New Hampshire's four-county nonattainment area. EPA approval of this SIP revision is currently pending. New Hampshire does not intend to withdraw this SIP revision. However, because opting out of the federal RFG program could affect both the administrative completeness and the ultimate approval of this SIP revision, New Hampshire will replace federal RFG as a VOC and NOx control measure by adopting rules to implement a OFRFG that will provide VOC and NOx emissions reductions equivalent to those achieved by federal RFG. As a result, no change from the VOC and NOx emission reduction values in the pending SIP revision is expected. Again, OFRFG will be required in the same areas of New Hampshire that federal RFG is currently required (i.e., Hillsborough, Merrimack, Rockingham, and Strafford counties). Upon final adoption of its OFRFG rules, DES will submit a corresponding modification to this currently pending SIP revision. Using the expedited process noted above, DES intends to complete this rulemaking within 60 days.

Currently, 40 CFR 80.72(c) prohibits states from opting out of the federal RFG program until January 1, 2004. But for this constraint, EPA and New Hampshire could together move rapidly to alleviate the increasing threat of MtBE contamination by enabling the State to opt out of the federal RFG program *prior to* January 1, 2004. Given the extent of the MtBE contamination that has resulted from the use of federal RFG, the State of New Hampshire re-emphasizes and reiterates the request made in Governor Shaheen's April 16, 2001 letter that EPA address this section of the federal RFG rule, either in a formal rulemaking process or through the use of enforcement discretion, to allow New Hampshire to pursue an earlier opt out date than January 1, 2004, and to provide such other relief as may be possible.

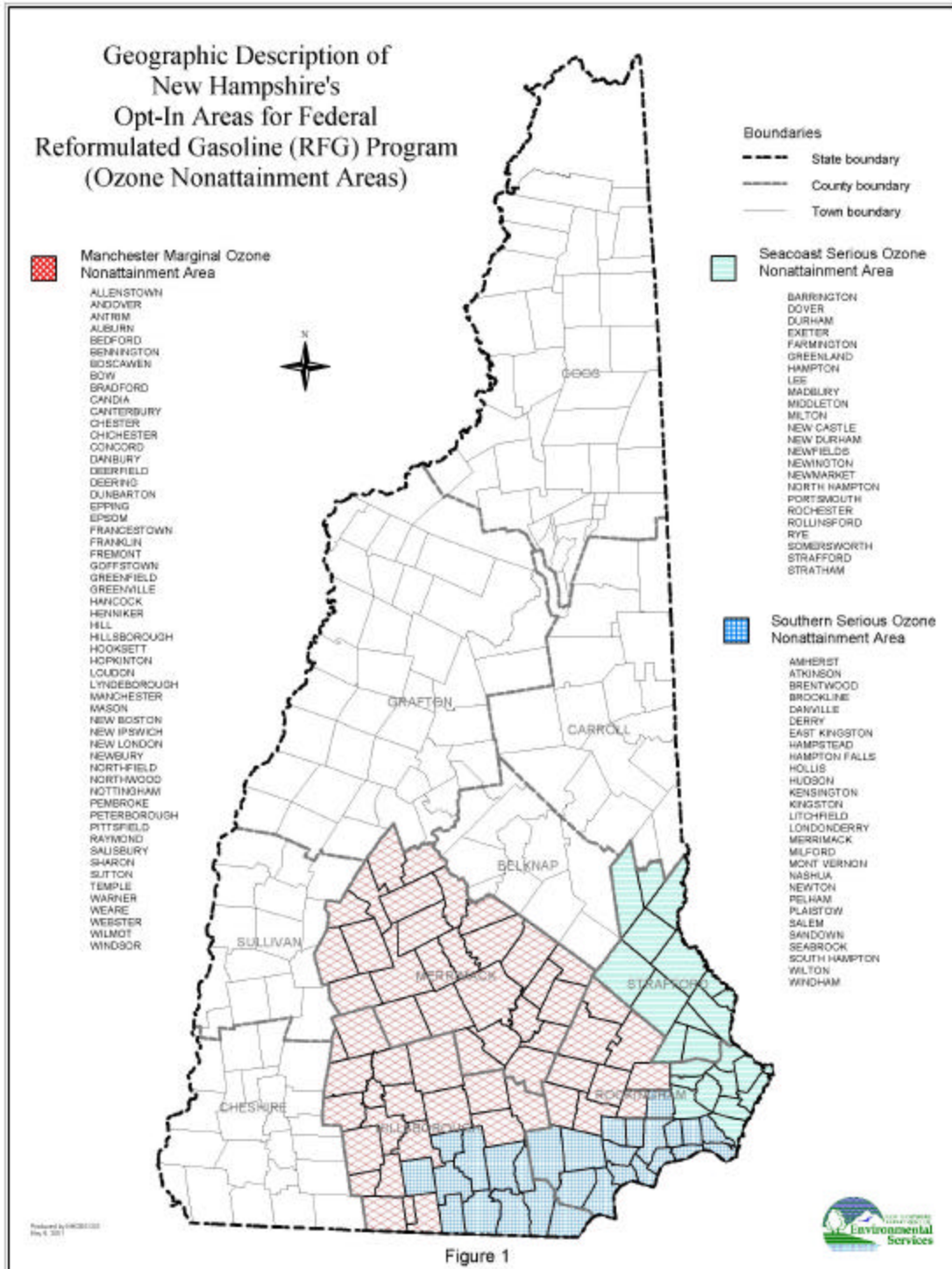
Submitted this 30th day of May in the year 2001,



Robert W. Varney, Commissioner
New Hampshire Department of Environmental Services

ATTACHMENT 1.

New Hampshire's Opt-In Areas for Federal RFG



ATTACHMENT 2.**Revisions to New Hampshire's State Implementation Plan
Which Rely Upon Federal RFG as a Control Measure**

State Implementation Plan (SIP) Revision	Submission Date	EPA Approval Status	Federal Register Notice
New Hampshire 1996 15% VOC Rate of Progress Plan	Submitted to EPA August 29, 1996	Approved by EPA December 7, 1998	63 FR 67405
New Hampshire Stage II Comparability Analysis	Submitted to EPA April 30, 1998	Approved by EPA September 29, 1999	64 FR 52434
New Hampshire Clean Fuel Vehicles SIP	Submitted to EPA June 7, 1994	Approved by EPA September 29, 1999	64 FR 52434
Carbon Monoxide (CO) SIP Revision Redesignation to Attainment for CO in Manchester, NH	Submitted to EPA December 11, 1998	Approved by EPA November 29, 2000	65 FR 71060
Carbon Monoxide (CO) SIP Revision Redesignation to Attainment for CO in Nashua, NH	Submitted to EPA November 30, 1998	Approved by EPA November 29, 2000	65 FR 71060
New Hampshire Post – 1996 Reasonable Further Progress Plan	Submitted to EPA September 27, 1996	EPA approval is <u>pending</u> . EPA found that the submittal was complete on October 9, 1996. New Hampshire fulfilled its obligations under the Clean Air Act Section 182(c)(2)(B) with the State's submittal on September 27, 1996.	n/a
New Hampshire 2003 Ozone Attainment Demonstration	Phase I submitted to EPA June 2, 1995; found complete by EPA December 2, 1995 Phase II submitted to EPA June 30, 1998	EPA approval is <u>pending</u> . New Hampshire fulfilled its obligations under the Clean Air Act Section 182(c)(2)(A) with the State's submittals on June 2, 1995 and June 30, 1998.	n/a

ATTACHMENT 5

***New Hampshire's Application for Relief from Federally
Preempted Gasoline Standards***



JEANNE SHAHEEN
GOVERNOR

STATE OF NEW HAMPSHIRE

OFFICE OF THE GOVERNOR

December 7, 2001

Mr. Robert W. Varney
Regional Administrator
U.S. Environmental Protection Agency, Region I
1 Congress Street, Suite 1100
Boston, MA 02114-2023

Re: Submittals Necessary to Opt-Out of the Federal Reformulated Gasoline Program

Dear Regional Administrator Varney:

Bob,

Last spring, in Executive Order 2001-02, I directed the New Hampshire Department of Environmental Services (DES) to prepare and submit to the U.S. Environmental Protection Agency (EPA) all documentation necessary for the State of New Hampshire to opt-out of the federal reformulated gasoline (RFG) program. House Bill 758 (HB 758), which I signed into law on June 26, 2001, provided a similar directive from the New Hampshire Legislature.

These actions were taken to address the growing threat of Methyl-tertiary Butyl Ether (MtBE) contamination in New Hampshire's water resources from accidental releases of RFG containing MtBE. As you know, MtBE is employed by refiners to meet a federal Clean Air Act (CAA) requirement that RFG contain a minimum of 2% oxygen by weight (i.e., the "oxygen mandate"). The failure of Congress to provide states with appropriate flexibility regarding this mandate is why RFG distributed in the Northeast contains nearly 11% MtBE by volume, and has forced the state to seek appropriate relief through a waiver of this federal requirement.

On May 30, 2001, I submitted New Hampshire's formal petition to opt-out of federal RFG as prescribed in 40 CFR 80.72. At that time, I noted that DES would (1) adopt administrative rules to effectuate a replacement fuel program for the State, and (2) prepare a request for relief from CAA §211(c)(4)(A), pursuant to §211(c)(4)(C), in order to adopt a state control measure that affects federally regulated fuels or fuel components.

In response to my Executive Order and in accordance with the requirements of HB 758, DES has adopted an interim rule, New Hampshire Code of Administrative Rules Part Env-A 1611, *Oxygen-Flexible Reformulated Gasoline* (OFRFG). A copy of this rule is enclosed. This rule has been adopted in accordance with New Hampshire RSA 541-A, the State's Administrative Procedures Act, and public hearings were held on September 21, 2001 and October 19, 2001 before the Joint Legislative Committee on Administrative Rules (JLCAR). In order to expedite the submittal of this documentation to EPA, the OFRFG rule was adopted as an interim rule, valid for 180 days from the date of adoption. The standard rulemaking process for an identical permanent rule has already commenced, and the permanent rule will be adopted prior to expiration of the interim rule.

New Hampshire's OFRFG rule establishes specifications for, and authorizes the sale and distribution of, OFRFG in the State's southern four-county ozone nonattainment area (i.e.,

equivalent to federal RFG specifications with the exception that no minimum oxygen content is required. By definition then, OFRFG will provide identical reductions in volatile organic compound (VOC) emissions as federal RFG. As a result, no change from the VOC emission reduction values incorporated into New Hampshire's existing State Implementation Plan (SIP) is expected. Please note that the provisions in the OFRFG rule regarding toxics, benzene, and wintertime NOx emissions are included solely to provide consistency with the federal RFG program for the benefit of petroleum refiners. These provisions, while included in the state rule, are not being submitted for EPA review or approval.

Along with the OFRFG rule, I am today submitting *New Hampshire's Application for Relief from Federally Preempted Gasoline Standards* pursuant to §211(c)(4)(C) of the CAA. This document outlines the role that federal RFG currently plays in New Hampshire's SIP, and assesses alternative control measure options to achieve the requisite level of VOC reductions in the SIP. Upon New Hampshire's opt-out of the federal RFG program, RFG will no longer be an enforceable control measure in New Hampshire's SIP. Thus, an enforceable state fuels regulation – the OFRFG rule – is necessary to maintain the integrity of New Hampshire's SIP in pursuit of attainment of the National Ambient Air Quality Standard (NAAQS) for ground level ozone. When the permanent OFRFG rule is adopted, which is expected in the first quarter of 2002, an appropriate SIP revision will be prepared and submitted to your office.

In my April 16, 2001 letter to Administrator Whitman conveying New Hampshire's intent to opt-out of the federal RFG program, I also addressed the issue of an expedited opt-out date. Specifically, I requested that EPA amend 40 CFR 80.72 to allow for an opt-out date earlier than the January 1, 2004 date provided in the current federal RFG rule, or to provide such other relief as may enable New Hampshire to more promptly reduce the threat of MtBE contamination in its water resources. In processing this submittal, I reiterate my request that EPA recognize the importance of avoiding an unnecessary two-year delay in reducing this threat.

I trust that your staff will review and approve these documents as soon as possible in order to allow New Hampshire to opt-out of the RFG program at the earliest possible date and enable the refining industry to reduce MtBE levels in gasoline distributed in New Hampshire's ozone nonattainment areas. Thank you for your attention to this urgent matter, and please do not hesitate to contact DES Assistant Commissioner Dana Bisbee at (603-271-3449) if you require additional information regarding either the OFRFG rule or New Hampshire's application for relief.

Very truly yours,



Jeanne Shaheen

Enclosures:

New Hampshire Interim OFRFG Rule
New Hampshire's Application for Relief from Federally Preempted Gasoline Standards

cc: The Honorable Bob Smith
The Honorable Judd Gregg
The Honorable Charles Bass
The Honorable John E. Sununu
G. Dana Bisbee, DES Assistant Commissioner

New Hampshire's Application for Relief from Federally Preempted Gasoline Standards

December 7, 2001

Prepared by

The New Hampshire
Department of Environmental Services



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1. INTRODUCTION

New Hampshire adopted a rule on October 29, 2001 to regulate air pollution performance standards for gasoline supplied to areas presently designated as nonattainment for the National Ambient Air Quality Standard (NAAQS) for ground level ozone. This rule is referred to as the Oxygen Flexible Reformulated Gasoline (OFRFG) rule.¹ With this application for relief from federally preempted gasoline standards, New Hampshire is requesting approval from the U.S. Environmental Protection Agency (EPA) to enforce this rule. New Hampshire will also be requesting approval for a revision to the State Implementation Plan (SIP) to replace federal RFG as a VOC control strategy with OFRFG.

New Hampshire opted-in to the federal reformulated gasoline (RFG) program, in a letter from Governor Judd Gregg dated on October 22, 1991, as a volatile organic compound (VOC) control strategy. Beginning in 1995, RFG was required to be supplied in Hillsborough, Merrimack, Rockingham, and Strafford counties (New Hampshire's "four-county area").² New Hampshire opted-in to the RFG program to help meet its VOC reduction and State Implementation Plan (SIP) obligations under Section 110 of the federal Clean Air Act (CAA), and to help reach attainment with the one-hour ozone NAAQS. However, because of the federal statutory requirement that RFG contain 2% oxygen by weight and the economics of the available options for meeting this requirement, federal RFG supplied to New Hampshire typically contains five to ten times more methyl tertiary-butyl ether (MTBE) than conventional gasoline.³ MTBE, when accidentally released into the environment, travels much more readily than other components of gasoline in groundwater. Compounding the problem, MTBE is not broken down (biodegraded) as rapidly as most other components of gasoline. As a result, MTBE represents a greater contamination threat to the state's water resources.

Since the introduction of RFG containing high levels of MTBE, New Hampshire has experienced dramatically increased incidences of MTBE detections in drinking water and other water resources. In response, New Hampshire undertook several steps to diminish the threat of MTBE contamination, leading ultimately to Executive Order 2001-02⁴ signed by Governor Jeanne Shaheen in April 2001. This Executive Order instructed the New Hampshire Department of Environmental Services (DES) to "opt-out" of the federal RFG program. Subsequently the New Hampshire General Court passed House Bill 758⁵ (signed by Gov. Shaheen on June 26, 2001), which contained language specifically directing DES to pursue an "opt-out" from the federal RFG program. On May 31, 2001,

¹ The New Hampshire Code of Administrative Rules, Part Env-A 1611 – an interim rule, see <http://www.des.state.nh.us/ard/prpsdrul.htm>.

² The four-county area (Hillsborough, Merrimack, Rockingham, and Strafford counties) encompasses all of the State's areas currently designated as nonattainment for the one-hour ozone National Ambient Air Quality Standard.

³ See the *Study of Reformulated Gasoline Distributed Outside of New Hampshire's Four-County Nonattainment Area*, available on the DES web site, see http://www.des.state.nh.us/mtbe_doclist.htm.

⁴ See <http://webster.state.nh.us/governor/media/eo200102.html>.

⁵ See <http://www.gencourt.state.nh.us/legislation/2001/HB0758.html>.

New Hampshire submitted to the U.S. Environmental Protection Agency (EPA) an official petition to opt-out of the federal RFG program.⁶

Under 40 CFR 80.72, EPA is not authorized to approve state petitions to “opt-out” of the RFG program until a demonstration is made that the integrity of the state’s SIP can be maintained without RFG (i.e., through the implementation of other programs which provide equivalent reductions). RFG is relied upon as a control strategy in a number of revisions to New Hampshire’s SIP.

The purpose of this document is to demonstrate that, in lieu of RFG (which is no longer an option in New Hampshire), an enforceable state fuels regulation is necessary to maintain the integrity of New Hampshire’s SIP and to attain the NAAQS for ground level ozone.

⁶ See http://www.des.state.nh.us/ard_intro.htm, under “What’s New.”

2. BACKGROUND

New Hampshire has four counties which have historically recorded violations of the federal NAAQS for ground level ozone. These four counties are divided into three separate ozone nonattainment areas (i.e., Seacoast and Southern Serious Ozone Nonattainment Areas, and the Manchester Marginal Ozone Nonattainment Area) based on the 1990 consolidated statistical metropolitan area designations and nonattainment classifications established under federal CAA Sections 172 and 181⁷ (see Figure 1). New Hampshire is also located within the Ozone Transport Region.⁸

Section 182(b)(1) of the CAA required the state to submit a SIP revision showing that a reduction in VOCs of at least 15% from 1990 base year levels would be achieved based on the federally enforceable programs New Hampshire has in place. New Hampshire's 1996 Rate of Progress (ROP) Plan, (a.k.a. 15% Plan), was approved by EPA on December 7, 1998. In addition, New Hampshire's two serious nonattainment areas were required under Section 182(c)(2) to prepare and submit Reasonable Further Progress plans to demonstrate an additional 3% VOC per year reduction (in addition to 15% by 1996) through the year 1999 (from base year 1990), as well as a demonstration that the SIP provides for attainment of the ozone standard. New Hampshire submitted its Post-1996 Reasonable Further Progress Plan and Ozone Attainment Demonstrations on September 27, 1996 and June 30, 1998 respectively. Table 1 provides a summary and the approval status of New Hampshire programs that rely on federal RFG as a control measure.

As of this date, New Hampshire has satisfied all Section 110 CAA requirements including the submission of a SIP, and all measures contained within the SIP have been implemented. Table 2 shows a wide array of state and federal control programs aimed at reducing emissions of VOCs that have been implemented in New Hampshire. Some, but not all, of these measures were included in New Hampshire's 15% ROP Plan.

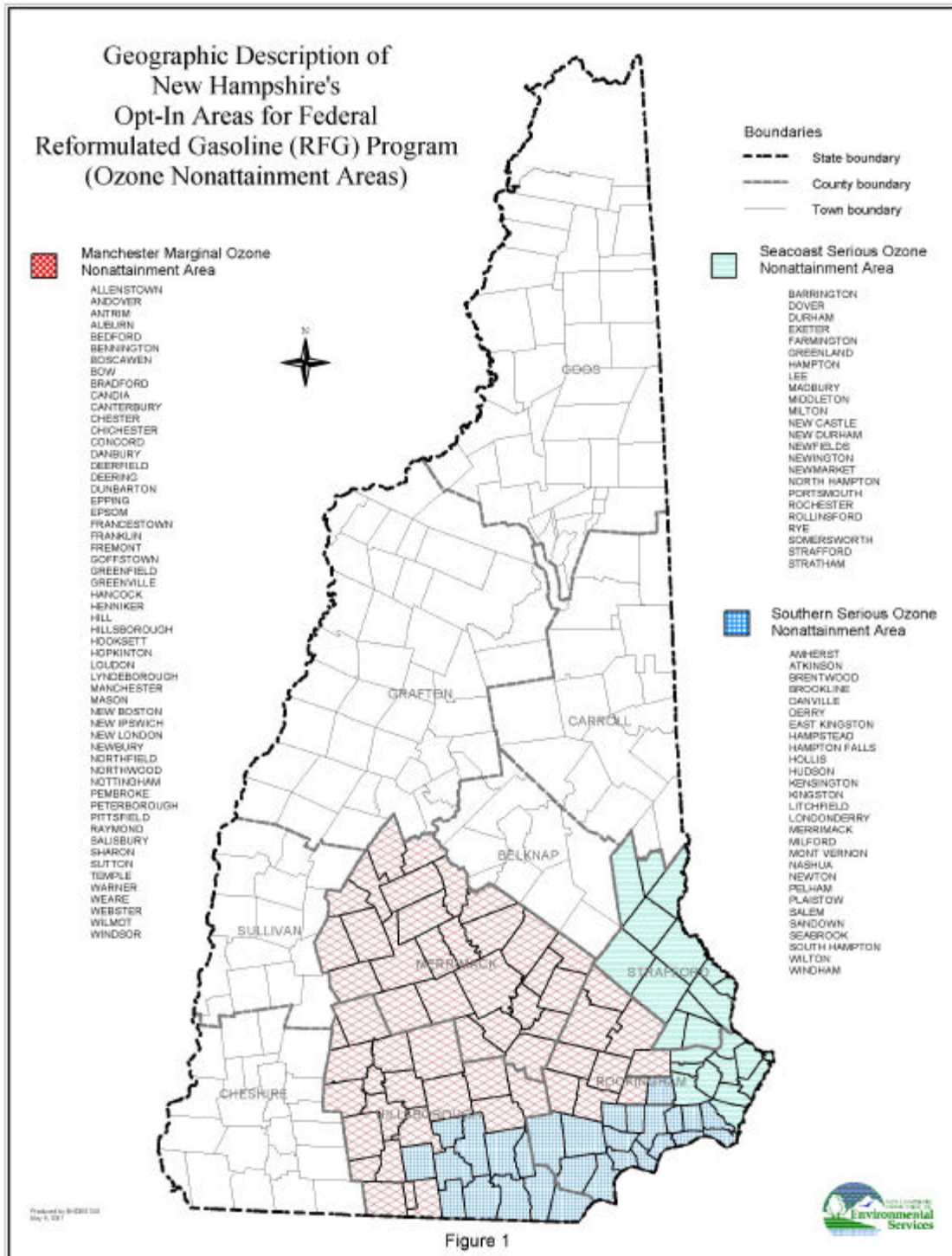
Under Section 211(c)(4)(A) of the CAA, states are pre-empted from prescribing or attempting to enforce regulations that control or prohibit any characteristic or component of a fuel or fuel additive. However, Section 211(c)(4)(C) of the CAA authorizes the Administrator of EPA to approve such regulations for individual states upon a finding that the control measure(s) contained in the state's SIP is necessary to achieve attainment with a primary or secondary NAAQS. Specifically, the Administrator may make this finding "... if he finds that the State control or prohibition is necessary to achieve the national primary or secondary ambient air quality standard which the plan implements. The Administrator may find that a State control or prohibition is necessary to achieve that standard if no other measures that would bring about timely attainment exist, or if other measures exist that are technically possible to implement, but are unreasonable or

⁷ See <http://www4.law.cornell.edu/uscode/42/7511.html> and <http://www4.law.cornell.edu/uscode/42/7511a.html>. These areas were designated and classified relative to the NAAQS for ozone under Subpart 1 of Title 1 of the federal Clean Air Act (Section 162).

⁸ See Section 184 of the federal Clean Air Act.

impracticable. The Administrator may also make a finding of necessity under this subparagraph even if the plan for the area does not contain an approved demonstration of timely attainment.”

FIGURE 2.1 - New Hampshire's Opt-In Areas for Federal RFG



**TABLE 2.1 - Revisions to New Hampshire's State Implementation Plan
Which Rely Upon Federal RFG as a Control Measure**

State Implementation Plan (SIP) Revision	Submission Date	EPA Approval Status	Federal Register Notice
New Hampshire 1996 15% VOC Rate of Progress Plan	Submitted to EPA August 29, 1996	Approved by EPA December 7, 1998	63 FR 67405
New Hampshire Stage II Comparability Analysis	Submitted to EPA April 30, 1998	Approved by EPA September 29, 1999	64 FR 52434
New Hampshire Clean Fuel Vehicles SIP	Submitted to EPA June 7, 1994	Approved by EPA September 29, 1999	64 FR 52434
Carbon Monoxide (CO) SIP Revision Redesignation to Attainment for CO in Manchester, NH	Submitted to EPA December 11, 1998	Approved by EPA November 29, 2000	65 FR 71060
Carbon Monoxide (CO) SIP Revision Redesignation to Attainment for CO in Nashua, NH	Submitted to EPA November 30, 1998	Approved by EPA November 29, 2000	65 FR 71060
New Hampshire Post – 1996 Reasonable Further Progress Plan	Submitted to EPA September 27, 1996	EPA approval is <u>pending</u> . EPA found that the submittal was complete on October 9, 1996. New Hampshire fulfilled its obligations under the Clean Air Act Section 182(c)(2)(B) with the State's submittal on September 27, 1996.	n/a
New Hampshire 2003 Ozone Attainment Demonstration	Phase I submitted to EPA June 2, 1995; found complete by EPA December 2, 1995 Phase II submitted to EPA June 30, 1998	EPA approval is <u>pending</u> . New Hampshire fulfilled its obligations under the Clean Air Act Section 182(c)(2)(A) with the State's submittals on June 2, 1995 and June 30, 1998.	n/a

Table 2.2 - Summary of State VOC Control Programs

State VOC Control Programs	State Rule Citation	Implementation Date	Last Revision
Stage I Vapor Recovery	Env-A 1205	May 1, 1993	Feb 22, 1996
Stage II Vapor Recovery	Env-A 1205	Nov 1, 1994	Sep 28, 1996
Bulk Terminal VOC Reduction	Env-A 1204.22	undetermined	Aug 31, 1995
Motor Vehicle Enhanced Safety Inspection	Saf-C 3221A	Jan 1, 1999	None
National Low Emitting Vehicle	Env-A 3600	Jan 1, 1999	None
Emulsified Asphalt VOC Restrictions	Env-A 1204.25	Aug 31, 1995	None
Non-CTG VOC RACT	Env-A 1204.05	Jul 1, 1979	Aug 27, 1998
Solvent Degreaser Control	Env-A 1204.26	Jul 1, 1979	Aug 31, 1995
Surface Coating Control	Env-A 803	undetermined	Aug 31, 1995
Rotogravure and Flexography Printing Control	Env-A 1204.18	Jul 1, 1979	Aug 31, 1995

Table 2.3 - Summary of Federal VOC Control Programs

Federal Control Programs	Implementation Date
Federal Motor Vehicle Control Program (FMVCP)	Prior to 1990
Fuel Volatility (RVP) Reductions to 9.0 psi	May 1, 1989
Tier I Vehicles (post-1994 Federal Vehicle Standards)	February 19, 1993
Small Engine Standards	Phase I - 1996
Treatment Storage and Disposal Facilities	Phase I - 1996
Architectural and Industrial Maintenance Coatings	1998
Autobody Refinishing	1998
Vehicle Onboard Vapor Recovery Systems (ORVR)	Phase I – 1998
Consumer Products	July 1998
Diesel Truck and Bus Engines	Phase I – 1990 Phase II - 1998
Nonroad Diesel Engines	Phase I – 1996 Phase II - 2007
Lawn and Garden Equipment	Phase I - 1997
Pleasure Craft	Phase I – 1998
Aircraft Standards	1996 - Phase I
Marine Vessels	1998
Vehicle Refueling Onboard Canisters	1998
Federal Reformulated Gasoline (applies to 4 NH counties)	Phase I – 1995 Phase II – 2000
Federal Tier 2 Vehicles/ Gasoline Sulfur Rule	Phase-in starts 2004

3. STATE-MANDATED POLICY DIRECTION REGARDING FUEL PROGRAMS

New Hampshire Governor Jeanne Shaheen signed Executive Order 2001-02⁹ on April 16, 2001, which instructed DES to opt-out of the federal RFG program. In addition, New Hampshire's General Court passed House Bill 758¹⁰ (signed by Gov. Shaheen June 26, 2001), which also specifically directed DES to pursue a prompt opt-out from the federal RFG program. Consistent with these directives, on May 30, 2001, the State of New Hampshire petitioned EPA to opt-out of the federal RFG program¹¹ in an effort to reduce MTBE levels in gasoline supplied to New Hampshire.

Federal RFG has been a critical VOC reduction strategy in New Hampshire's SIP and in demonstrating New Hampshire's ability to reach attainment with the NAAQS for ozone due to its significant VOC and nitrogen oxides (NOx) reductions compared to conventional gasoline. DES estimates that RFG is responsible for approximately 15.6 tons per day of VOC reductions in New Hampshire's four-county area nonattainment.¹²

There are few options available, other than fuel strategies, that provide such significant VOC reductions. To replace the emissions benefits attributed to RFG, New Hampshire has adopted a rule, referred to as the Oxygen-Flexible RFG (OFRFG) rule,¹³ which will provide VOC and NOx reductions equivalent to federal RFG, but will not include the minimum oxygen content requirement that the state adopted by reference when it opted into the federal RFG program. Accordingly, the State of New Hampshire seeks relief under section 211(c)(4)(C) of the CAA to establish a state regulation to set performance standards for VOCs for gasoline distributed and sold in the four-county area.¹⁴

⁹ See <http://webster.state.nh.us/governor/media/eo200102.html>

¹⁰ See <http://www.gencourt.state.nh.us/legislation/2001/HB0758.html>.

¹¹ See http://www.des.state.nh.us/ard_intro.htm.

¹² This estimate of VOC reductions from federal RFG in the four-county area is for the year 2002.

Estimated reductions from RFG are a function of vehicle registration mix and vehicle miles traveled, and thus the environmental benefit of RFG varies from year to year.

¹³ The New Hampshire Code of Administrative Rules, Part Env-A 1611 – an interim rule, see <http://www.des.state.nh.us/ard/prpsdrul.htm>.

¹⁴ The four-county area in New Hampshire includes Hillsborough, Merrimack, Rockingham, and Strafford counties. These counties are presently designated as nonattainment of the ground level ozone NAAQS. Federal RFG is currently required in the four-county area.

4. REQUIREMENTS FOR ALTERNATIVE FUEL SPECIFICATIONS

Since EPA has promulgated federal standards for the specifications of reformulated gasoline (RFG) under sections 211(c) and 211(h) of the CAA, New Hampshire is prohibited from adopting a non-identical state control of fuels under section 211(c)(4). Section 211(c)(4)(A) of the CAA prohibits state regulation of fuel characteristics or components for which EPA has adopted a control or prohibition, unless the state control is identical to the federal control. Under section 211(c)(4)(C), EPA may approve a non-identical state fuel control as a SIP provision, if the state demonstrates that the measure is necessary to achieve the national primary or secondary ambient air quality standard that the plan implements:

“...A State may prescribe and enforce, for purposes of motor vehicle emission control, a control or prohibition respecting the use of a fuel or fuel additive in a motor vehicle or motor vehicle engine if an applicable implementation plan for such State under section 110 so provides. The Administrator may approve such provision in an implementation plan, or promulgate an implementation plan containing such a provision, only if he finds that the State control or prohibition is necessary to achieve the national primary or secondary ambient air quality standard which the plan implements. The Administrator may find that a State control or prohibition is necessary to achieve that standard if no other measures that would bring about timely attainment exist, or if other measures exist and are technically possible to implement, but are unreasonable or impracticable. The Administrator may make a finding of necessity under this subparagraph even if the plan for the area does not contain an approved demonstration of timely attainment.”¹⁵

4.1. Elements Necessary for Relief from Federal Preemption of State Fuels Under Clean Air Act Section 211(c)(4)(C)

For New Hampshire to make its OFRFG rule federally enforceable, the State must apply for relief from federal preemption and submit a SIP revision adopting it as a state fuel control. The State must provide information showing that the measure is necessary in order to provide sufficient VOC reductions to meet the ozone NAAQS based on the statutory requirements for showing necessity.¹⁶ This request for relief must:

- 1) Identify the quantity of reductions needed to reach attainment;
- 2) Identify possible other control measures and the quantity of reductions each would achieve;

¹⁵ Text of federal Clean Air Act section 211(c)(4)(C), see <http://www4.law.cornell.edu/uscode/42/7545.html>.

¹⁶ See EPA guidance from the Office of Mobile Sources, August 1997, entitled *Guidance On Use Of Opt-In RFG And Low RVP Requirements In Ozone SIPs*, <http://www.epa.gov/otaq/regs/fuels/rvpguide.pdf>.

- 3) Explain in detail, with adequate factual support, which of those identified control measures are considered unreasonable or impracticable; and
- 4) Show that even with the implementation of all reasonable and practicable measures, the state would need additional emissions reductions for timely attainment, and the state fuel measure would supply some or all of such additional reductions.

4.2. Determining Whether Other Measures are Unreasonable or Impracticable

In determining whether ozone control measures are unreasonable or impracticable, reasonableness and practicability are determined in comparison to the state-specific gasoline control program; the issue for New Hampshire is whether these other measure(s) are reasonable and practicable in light of the availability of OFRFG. Some measures may be reasonable and practicable for some areas of the country, but given the advantages of OFRFG, these measures may be comparatively unreasonable or impracticable. Finding another measure unreasonable or impracticable under these criteria would not necessarily imply that the measure would be unreasonable or impracticable for other areas, or even for the same area under different circumstances.

While the basis for finding unreasonableness or impracticability is in part comparative, the state still must provide solid reasons why the other measures are unreasonable or impracticable and must demonstrate these reasons with adequate factual support. Reasons why a measure might be unreasonable or impracticable for a particular area include, but are not limited to, the following:

- 1) Length of time necessary to implement the measure;
- 2) Length of time necessary to achieve ozone reduction benefits;
- 3) Degree of disruption entailed by implementation;
- 4) Other implementation concerns, such as supply issues;
- 5) Costs to industry, consumers or the state;
- 6) Cost-effectiveness; and
- 7) Reliance on commercially unavailable technology.

A strong justification for finding a measure unreasonable or impracticable might rely upon the combination of several of these reasons.

4.3. State Implementation Plan Requirements

Under the requirements of Sections 182 and 184 of the federal Clean Air Act, New Hampshire implemented several VOC and NO_x control strategies to address nonattainment with the ozone NAAQS. Federal RFG plays a significant role in approved and pending SIP revisions that New Hampshire has filed with EPA in fulfillment of the State's obligations under the CAA (see Table 1). Under the federal regulations for opting-out of the RFG program (40 CFR 80.72), in its petition to opt-out of the RFG program, a State must describe the alternative air quality measures that it plans to use to replace RFG as a control measure.¹⁷ A subsequent SIP revision must then be filed with, and approved by, EPA to make federally enforceable the State's plan to maintain the integrity of the SIP.

To replace federal RFG as a VOC control measure, New Hampshire has adopted rules implementing OFRFG. By definition, OFRFG will provide reductions in VOC emissions equivalent to federal RFG, so no change from the VOC emission reduction values in the existing SIP revisions will occur. OFRFG will be required in the same areas of New Hampshire that federal RFG is currently required (i.e., Hillsborough, Merrimack, Rockingham, and Strafford counties). Upon final adoption of its OFRFG rules, New Hampshire will submit corresponding modifications to these currently approved SIP revisions.

4.4. Compliance Strategy

New Hampshire has developed a compliance strategy to ensure that the gasoline being delivered to New Hampshire's four southeastern counties is meeting the specifications of the OFRFG rule. Because the OFRFG rule relies on performance standards that are much the same as federal RFG, the compliance strategy consists of the screening and laboratory analysis of gasoline samples for data inputs to the Complex Model for determination of compliance with New Hampshire's OFRFG rule.

Gasoline certified as Phase II federal RFG is a compliant fuel, and documentation of that certification will suffice as evidence of compliance. New Hampshire's DES will have the authority to require gasoline distributors and/or retailers to provide adequate information on their gasoline to provide the necessary inputs to the Complex Model to determine compliance. New Hampshire's compliance strategy will be detailed in a SIP revision requesting approval of OFRFG as a SIP control measure to help attain and maintain the federal NAAQS for ground level ozone.

¹⁷ Taken from 40 CFR 80.72(b)(3)(ii).

5. ANALYSIS OF SOURCE CATEGORIES AND POTENTIAL ADDITIONAL REDUCTIONS

In Tables 5.1, 5.2, and 5.3 (found on pages 27-30) and the following discussion, DES has analyzed its 1996 emissions inventory for potential additional control strategies and emissions reductions for Hillsborough, Merrimack, Rockingham, and Strafford counties. As discussed in the previous section, opting-out of the federal reformulated gasoline program will require the implementation of new control programs or enhancements to existing programs. The following analysis utilizes DES's most recent (1996) periodic inventory. While growth factors vary between sectors, it is highly unlikely any positive (or negative) growth in emissions between 1996 and 2002 would fundamentally change this analysis. For the sake of this analysis, a conservative assumption (reflecting a high annual growth factor of 2%) was applied to potential additional VOC reductions from 1996 to 2002.

5.1. Point Sources

Point or stationary sources are conventional sources typically referenced in relation to emissions from larger commercial and industrial facilities such as factories, power plants, etc. This section discusses the potential for reductions from these sources and is summarized in Table 5.1 on page 27.

5.1.1. Stationary Sources

Stationary point source VOC emissions in Hillsborough, Merrimack, Rockingham, and Strafford counties totaled an estimated 10.221 tons per summer weekday (tpswd) after control in 1996. Point sources in New Hampshire are subject to a variety of VOC control requirements including the DES's Env-A 803, *VOC Testing*; Env-A 1204.05, *RACT Order Application and Issuance Procedures*,¹⁸ Env-A 1204.10, *Applicability Criteria and Compliance Standards for Coating of Paper, Fabric, Film and Foil Substrates*; Env-A 1204.18, *Applicability Criteria and Compliance Standards for Rotogravure and Flexographic Printing*; Env-A 1204.20, *Applicability Criteria and Compliance Standards for Fixed-Roof Tank VOL Storage*; Env-A 1204.22, *Applicability Criteria and Compliance Standards for Bulk Gasoline Loading Terminals*; and Env-A 1204.26, *Applicability Criteria and Compliance Standards for Solvent Metal Cleaning*.

DES has identified one measure that might provide additional VOC emission reductions from point sources, namely reducing the major source and Env-A 1204.05 non-CTG VOC RACT applicability threshold from 50 to 10 tons per year of actual emissions. DES estimates that reducing the applicability threshold for Env-A 1204.05 to 10 tons per year or greater actual emissions would provide only an additional 0.057 tpswd in reductions in 2002.

¹⁸ Non-CTG (Control Techniques Guidelines) VOC RACT (Reasonably Available Control Technology).

If implemented, this strategy would provide minimal additional VOC reductions. In addition, before these controls could be implemented, DES would need to undertake an assessment of their actual emission reductions along with the costs and potential impacts on the regulated community. It is highly unlikely that DES could complete such an assessment and implement new regulations before the 2002 ozone season. Additional stationary source controls are not a practicable alternative to an OFRFG regulation.

5.1.2. Publicly Owned Treatment Works (POTWs)

In 1996, the estimated emissions for the POTW source category in New Hampshire were estimated at 0.306 tpswd. VOC emissions from major source POTW and industrial wastewater facilities are currently covered under DES's Env-A 1204.05, *RACT Order Application and Issuance Procedures*. EPA has drafted an Industrial Waste Water (IWW) CTG (EPA-453/D93-056) that cites the ability to reduce VOC emission reductions by as much as 99% in a cost-effective manner at IWW facilities with facility-wide VOC loadings greater than 11 tons per year and individual wastewater streams containing VOC concentrations of 10,000 parts per million by weight, or if a stream has total flow greater than 1 liter per minute and VOC concentrations greater than 500 parts per million by weight. Many of the control options discussed in the CTG, such as steam stripping or the reduction of upstream discharges may also be cost-effectively applied to similar sized POTW facilities. Utilizing the STAPPA/ALAPCO publication "*Meeting the 15-Percent Rate-of-Progress Requirement Under the Clean Air Act: A Menu of Options*," DES estimated the application of additional controls on this source category could provide an additional 0.241 tpswd in emissions reductions in 2002.

Before these controls could be implemented, however, DES would need to undertake an assessment of actual POTW emissions. States that have used an emission estimation model have found that emissions from POTWs were considerably lower than the estimates provided by the national emission factor used by New Hampshire and most other states. Alternatively, the South Coast Air Quality Management District (California) requires emissions testing and quantification at POTW facilities. In addition to better quantifying actual emissions, DES would also need to fully assess the economic impact of such controls on municipalities, and the length of time needed to implement these controls. Because of inventory questions, potential impacts on municipalities, and the length of time necessary to implement these controls, this strategy does not represent a reasonable and practicable alternative to an OFRFG regulation.

5.1.3. Treatment, Storage and Disposal Facilities (TSDFs)

New Hampshire does not have any emissions from treatment, storage and disposal facilities, therefore there are no additional reductions that can be made within this source category as a practicable or reasonable alternative to an OFRFG regulation.

5.1.4. Landfills

Landfill emissions for 1996 were estimated at 1.183 tpswd. In 1996, EPA published New Source Performance Standards (NSPS) and Emissions Guidelines (EG) requiring landfills with a design capacity of 2.5 million megagrams (Mg) or greater and non-methane organic compound (NMOC) emissions greater than 50 Mg/year to install gas collection and control systems. Similar controls have been required on smaller landfills in several areas of California. For example, the Sacramento Air Quality Control District requires landfills with greater than 500,000 tons of waste to install gas collection and control systems.

There are currently four landfill facilities within the four-county region in southern New Hampshire that are larger than 2.5 million Mg (or 2.5 million cubic meters). All of these facilities have installed off-gas collection systems installed along with either a flare or LFG/Diesel generation systems. DES estimates that approximately 80% of the landfill off-gas is collected and about 98% of that amount is destroyed in the subsequent combustion process. Due to the high destruction efficiency of combustion processes, the only remaining option for further reducing VOC emissions from the four landfills is to raise the collection efficiency of the off-gas collection systems to greater than 80%. To do this would require major reconstruction of the collection systems, potentially requiring extensive modifications to the landfill itself in the form of changing liners and ventilation collectors. Because of the low potential for substantial VOC reductions (<0.23 tpswd), this strategy is not considered a reasonable or practicable alternative to the OFRFG regulation.

5.2. Area Sources

Area sources are sources that individually may contribute very small amounts of pollution, but when considered in aggregate, due to the large number of individual sources, may emit significant volumes. Typical area sources would include gas stations, dry cleaners, consumer products (e.g., deodorant, hair spray, etc.), coating operations (e.g., auto refinishing), etc. This section discusses the potential for reductions from these sources and is summarized in Table 5.2 on page 28.

5.2.1. Gasoline/Fuel Distribution

5.2.1.1. Tank Truck Unloading (Stage I)

Tank truck unloading activities accounted for 1.431 tpswd of VOC emissions in Hillsborough, Merrimack, Rockingham, and Strafford counties in 1996. Any gasoline dispensing facility whose tank capacity exceeds 1100 gallons is subject to the Stage I requirements of DES's Env-A 1205.04(a)(2) Applicability of Stage I Requirements to Gasoline Dispensing Facilities regulation. These facilities were required, by November 1, 1994, to install and to operate a Stage I vapor control

system that will eliminate “splash” filling through submerged fill pipes that introduce gas to the bottom of the tank. Displaced fumes from the filled tank are then transferred through a sealed closed loop into the tank truck rather than released into the air. As a result of instituting these controls, 98.6% of the gasoline unloaded in these counties was subject to Stage I requirements in 1996. While the default rule effectiveness of Stage I programs is assumed to be 84%, New Hampshire has instituted a more aggressive compliance and enforcement program for Stage I, increasing the rule effectiveness to 90%. No additional significant emission reductions are available from this source category.

5.2.1.2. Vehicle Refueling

Vehicle refueling and associated spillage accounted for an estimated 1.669 tpswd of VOC emissions in 1996, after accounting for the application of Stage II vapor recovery controls and the use of federal reformulated gasoline. Stage II vapor recovery systems are currently required on all gasoline dispensing facilities with an annual throughput of 420,000 gallons or greater per year per the New Hampshire Code of Administrative Rules Part Env-A 1205.19, *Applicability of Stage II Requirements*.¹⁹ In 1996, the 420,000 gallon per year threshold represented Stage II controls on 84% of gasoline sales in the four-county area. DES estimates that extending the Stage II vapor control requirement to all service stations in the four-county nonattainment area would provide increased reductions of 0.038 tpswd.

Env-A 1205.19 would need to be amended in order to revise applicability to include all refueling stations. The rulemaking process generally takes at least six months to a year, and this type of rule change would require a reasonable lead time for affected facilities, most likely on the order of two years. Thus, it would not be possible to complete rulemaking before the beginning of the 2002 ozone season. In addition, about half of the gasoline dispensing facilities in the covered area (the four-county area) are currently exempt from Stage II requirements because their annual throughputs do not meet the threshold for implementation. However, roughly 85% of all gasoline distributed in the four-county area is subject to Stage II controls under the current annual threshold (420,000 gallons). In addition to problems regarding the timeliness of implementation, the costs to smaller facilities not currently subject to the rule (i.e., \$10K - \$25K per facility) makes the strategy of changing Env-A 1205 to reduce the number of exempt facilities an impracticable measure for achieving emission reductions.

5.2.1.3. Underground Tank Breathing

Underground storage tanks at gasoline service stations are required by fire code to be vented. Stage I vapor recovery devices limit emissions from these vents by channeling displacement vapors into the delivery truck during loading, but

¹⁹ See <http://www.des.state.nh.us/ard/enva1200.htm>.

emissions can still occur from the vents due to diurnal temperature and barometric pressure changes, and when pressure equalization occurs between delivery trucks and the underground tanks. Pressure/vacuum (P/V) vent valves can be installed on underground storage tank vent lines to maintain pressure within the tank. Such P/V vents have been in use for many years, and are available from several manufacturers. New Hampshire's Stage I rule contains a P/V valve requirement, as does the California BAQMD Regulation 8-Rule 7 and the SCAQMB Rule 461. Installation of P/V valves can achieve virtually a 100% control efficiency, and is cost-effective. DES has estimated that eliminating all underground storage tank breathing throughout the four-county area would yield an additional 0.229 tpswd reduction. Unfortunately, retrofitting all underground storage tanks with P/V vents will take some time, and it is not reasonable to expect that DES could promulgate regulations for this control strategy and have these controls in place before the start of the 2002 ozone season.

5.2.1.4. Leaking Underground Storage Tanks

The emissions from remediation of leaking underground storage tanks were estimated at 0.036 tpswd in 1996. Since New Hampshire currently has a compliance rate with federal underground storage tank removal and replacement requirements of more than 99%, current emissions from this source category are already considerably below the 1996 estimate. There is little if any opportunity for additional emission reductions from this source category²⁰ since the only effective control strategy (i.e., tank removal and replacement) is already nearly complete.

5.2.1.5. Tank Trucks in Transit

This source category accounted for 0.203 tpswd of emissions in 1996. Since tank trucks state-wide are already subject to the Stage I tank truck tightness requirements of DES's Env-A 1205, *Volatile Organic Compounds (VOC): Gasoline Dispensing Facilities and Cargo Trucks*, there is no potential for additional emission reductions from this source category.

5.2.1.6. Petroleum Vessel Unloading

Petroleum or marine vessel unloading operations accounted for only a small, unspecified amount of VOC emissions in 1996. Although New Hampshire does not have any petroleum refining facilities, petroleum unloading terminals in Newington (Rockingham county) handle petroleum products for local use. This system is already controlled within a closed system under current VOC RACT requirements.²¹ Petroleum products from vessels are removed via pipeline to several floating top storage tanks. As a result, the only VOC emissions from

²⁰ The total emissions from this category in 1996 were 0.05 tpswd.

²¹ See <http://www.des.state.nh.us/ard/enva1200.htm>.

unloading procedures come from occasional accidental spillage. Thus, adopting stricter controls for this source category does not represent a practicable or reasonable alternative to an OFRFG regulation.

5.2.1.7. Aircraft Refueling

Aircraft refueling procedures at airports utilize a primarily closed system in which there is minimal atmospheric exposure, thus volatilization is minimal. Emissions from refueling procedures are limited primarily to spillage. Emissions from refueling vehicles and other ground support equipment are included in the Off-Road emissions category. There are no additional practicable controls for reducing emissions from aircraft refueling procedures.

5.2.2. Stationary Fuel Use

This source category includes all small stationary source users of fuel, and was responsible for 0.096 tpswd of VOC emissions in 1996. There are no practicable controls for additional emission reductions from this source category.

5.2.3. Open Burning and On-Site (Home) Incineration

Open burning and incineration emissions during 1996 were estimated to total 1.274 tpswd. While the New Hampshire Legislature recently enacted additional prohibitions against the commercial open burning of materials other than wood, agricultural, forestry and solid or liquid fuel (RSA 125-C:4 and Env-A 1001, the emission reductions attributable to these restrictions are difficult to quantify. In 2001, the New Hampshire Legislature voted to additionally prohibit the open burning of residential trash in the vast majority of New Hampshire towns²². There is no potential for additional emission reductions from this source category.

5.2.4. Catastrophic and Accidental Releases

Catastrophic and accidental releases from oil spills and transportation accidents were responsible for a small and unspecified amount of emissions in 1996. Since these emissions are the result of accidents and catastrophic events, there is no opportunity for additional emission reductions from these sources.

5.2.5. Stationary Area Source Solvent Use

5.2.5.1. Dry Cleaning

The vast majority of drycleaners in New Hampshire use perchloroethylene (PERC) as their cleaning agent, which has been classified as an exempt solvent by EPA.

²² NH House Bill 274 (2001 Chapter Law 285), signed July 16, 2001 (See <http://gencourt.state.nh.us/legislation/2001/HB0274.html>)

Therefore, there are no additional reductions available from the area source dry cleaning category. There are two dry cleaners that use other solvents that are not exempt, and they are included in the point source category. These sources are subject to MACT standards, which require enclosure and solvent recycling, so no additional reductions can be achieved from these sources.

5.2.5.2. Surface Cleaning

The surface cleaning category includes four subcategories:

1. Automobile Repair;
2. Manufacturing;
3. Electronics; and
4. Miscellaneous

Total surface cleaning emissions in 1996 from these four subcategories totaled 4.676 tpswd, before accounting for controls. Surface cleaning emissions in New Hampshire are currently controlled under DES's Env-A 1204.26 *Applicability Criteria and Compliance Standards for Solvent Metal Cleaning* regulation, which controls VOC emissions from all new and existing solvent degreasers including cold cleaning degreasers, open-top vapor degreasers and conveyORIZED degreasers. Based on EPA guidance, DES has ascribed a control effectiveness of 20% to this area source category.

Additional reductions may be obtained from this source category through the use of alternative solvents, alternative cleaning processes and no-clean technologies. The use of alternative solvents is currently considered the most practicable option, and can result in emissions reductions of as much as 100% when aqueous solvents can be utilized. The prohibition of non-aqueous solvents would provide as much as an additional 5.266 tpswd²³ in emissions reductions in 2002 for the four-county area. The prohibition of non-aqueous cleaners would require significant process changes, however, so DES would need to study its effects on the regulated community, in particular specialty manufacturers such as the aerospace industry. Therefore, DES does not believe that the prohibition of non-aqueous surface cleaners is a practicable or reasonable alternative to an OFRFG regulation, particularly for the summer of 2002.

5.2.5.3. Surface Coatings

The surface coating category had estimated total emissions of 11.253 tpswd in 1996, before accounting for controls. It includes ten subcategories:

²³ This emissions reduction estimate is grown out from 1996 Periodic Emissions Inventory numbers at a rate of two% per year.

1. Automobile Refinishing;
2. Traffic Markings;
3. Furniture and Fixtures;
4. Machinery and Equipment
5. Other Transportation Equipment;
6. Factory Finished Wood;
7. Architectural Coatings;
8. Other Production Coatings;
9. High Performance Maintenance Coatings; and
10. Other Specialty Coatings.

Emissions from a number of these surface coating subcategories are currently being controlled by either state or federal programs:

Automobile Refinishing. Automobile refinishing operations were estimated to emit 2.592 tpswd of VOC emissions in 1996. In 1998, EPA published final regulations for the control of automobile refinishing emissions (40 CFR Part 59 Subpart B). This regulation established a number of emissions limits for automobile refinishing coatings and solvents, and established work practices designed to minimize VOC emissions. This rule is expected to reduce VOC emissions by approximately 0.959²⁴ tpswd. Several air pollution control agencies have adopted more stringent standards for this source category. For example, Massachusetts requires all coatings to be applied with high efficiency application equipment such as high volume low pressure (HVLP) or electrostatic application equipment. In California, the Sacramento Air Quality Management District has adopted more stringent VOC limits for a number of primers and topcoats. DES has estimated the potential benefits from adopting the South Coast Air Quality Management District surface preparation products VOC limit of 0.58 lbs/gal to be 2.592 tpswd. Adopting a requirement for HVLP or electrostatic spray equipment would provide an additional 1.347 tpswd in emissions reductions. While both high efficiency application equipment and more stringent VOC content limits might represent viable strategies for achieving additional emission reductions in the long-term, each has significant obstacles to near-term implementation. A requirement for automobile refinishing operations to utilize high efficiency application equipment will need to be accompanied by a significant lead-time, so sources are able to purchase and install this equipment. Requirements for more stringent emission limits on coatings could cause significant supply disruptions for New Hampshire sources, because these coatings may not be widely distributed on the east coast. Adoption of more stringent emission standards for autobody refinishing is an impracticable and unreasonable alternative to an OFRFG regulation for the 2002 ozone season.

²⁴ Based on a 37% reduction applied to the 2.592 tpswd 1996 inventory.

Traffic Markings. Traffic marking emissions in Hillsborough, Merrimack, Rockingham, and Strafford counties in 1996 were estimated to be no greater than 0.465 tpswd (assuming traffic marking emissions comprise all of the difference between automotive refinishing emissions and small industrial emissions) before accounting for controls. While a number of air pollution control agencies have adopted regulations limiting the VOC content of traffic paint to 250 g/l, and other states have been voluntarily using paints with VOC contents of approximately 120 g/l, DES would need to undertake a detailed analysis of current emission levels, potential for additional emission reductions, costs and other factors before adopting more stringent limits for this source category. Additional emission reductions from this source category are therefore impracticable and unreasonable for the 2002 ozone season.

Furniture and Fixtures, Factory Finished Wood, Machinery and Equipment, Other Transportation Equipment and Other Product Coatings. Emissions from these sources are currently being controlled through DES's Env-A 803, *VOC Testing* regulation, which requires sources to control their VOC emissions through the application of add-on control technology, low-VOC coatings, or meeting a daily-weighted average emission limitation. Emissions from aerospace manufacturing and rework facilities, ship repair, and wood furniture manufacturing facilities are controlled under the applicable federal maximum available control technology (MACT) emission limitation. Additional, but currently unquantified, reductions might be obtained from these source categories through the implementation of more stringent VOC emissions limits, increased requirements for add-on control technology, and lowered source applicability thresholds. A detailed analysis of current emission levels, potential for additional emission reductions, costs and other factors would be necessary before additional controls could be proposed for these source categories, so this measure is not a practicable alternative to an OFRFG regulation.

Architectural Coatings, High Performance Maintenance Coatings, Other Specialty Coatings. These sources are currently subject to the federal Architectural and Industrial Maintenance (AIM) Coatings regulation of August 14, 1998, which established VOC emissions limits for 55 categories of coatings. The federal AIM rule purportedly reduces VOC emissions from these categories by approximately 20%. Several states have adopted AIM rules with emission limits that are more stringent and cover more source categories than the federal rule. The South Coast Air Quality Management District's current AIM regulation provides a 28% reduction in VOC emissions, while STAPPA/ALAPCO has developed several proposals that would provide additional reductions above and beyond the federal rule. The most stringent of these, proposed for 2002, would provide a 41% reduction in VOC emissions.

DES has estimated that adoption of the current South Coast Air Quality Management District AIM coatings limits would provide an additional 0.694 tpswd reduction. Unfortunately, DES believes that the adoption of more stringent VOC content limits and/or additional coating categories in New Hampshire could result in significant supply disruptions and cost increases due to the small market for these goods. Before additional controls can be proposed for these source categories, DES would need to undertake a detailed analysis of current emission levels, potential for additional emission reductions, costs and other factors. Adoption of more stringent AIM requirements in the short term is thus neither a practicable nor reasonable alternative to an OFRFG regulation.

5.2.5.4. Graphic Arts

This source category includes rotogravure and flexographic printing and offset lithography processes. The graphic arts source category was responsible for emissions of 1.983 tpswd in 1996, before accounting for controls. Rotogravure and flexographic printing sources with maximum theoretical emissions of 50 tons per year or more are currently controlled under DES's Env-A 1204.18, *Applicability Criteria and Compliance Standards for Rotogravure and Flexographic Printing* regulation. Extending this regulation's applicability to offset lithography printing processes and requiring all sources to utilize either add-on controls or low-VOC inks providing at least a 70% reduction in emissions would provide overall source category reductions of approximately 1.563 tpswd. While DES believes that this level of control is technically feasible, the cost-effectiveness and impacts on the regulated community are currently unknown. Additional controls on this source category are therefore not a reasonable, timely, or practicable alternative to an OFRFG regulation.

5.2.5.5. Asphalt Paving.

DES currently regulates emissions from asphalt paving through the New Hampshire Code of Administrative Rules, Part Env-A 1204.25, *Applicability Criteria and Compliance Standards for Cutback and Emulsified Asphalt* regulation.²⁵ This rule prevents the use of cutback asphalt (i.e., asphalt liquefied with petroleum distillate, a VOC) during the ozone season, but does provide for several exemptions. Adopting the limits contained within California's South Coast Air Quality Management District (SCAQMD) Rule 1108²⁶ would provide no additional VOC reductions since cutback asphalt has been eliminated in southern New Hampshire.

²⁵ See <http://www.des.state.nh.us/ard/enva1200.htm>.

²⁶ SCAQMD Rule 1108 specifies that cutback asphalt can contain no more than 0.5% by volume organic compounds which evaporates at 500°F or lower as determined by ASDTM-D-402.

5.2.5.6. Pesticides

The pesticides source category had estimated emissions of 0.696 tpswd in 1996. Pesticide use in southern New Hampshire is limited as there is relatively little agricultural activity in these counties. While reductions from control measures such as reformulation of pesticides; reducing fumigant usage, using alternative application methods, applying microencapsulation techniques, and using integrated pest management²⁷ may be possible, emissions controls for this source category would require further study before implementation. There are widely varying estimates of the potential emissions reductions from this source category, with reduced-volume spraying and integrated pest management reducing pesticide use by 33 to 67%. Assuming a 50% reduction in pesticide use and/or VOC content, controls on this source category could provide an additional 0.392 tpswd in emissions reductions. The significant cost, supply and industry disruption associated with controls on this source category make implementation impracticable and unreasonable for the 2002 ozone season.

5.2.5.7. Consumer and Commercial Solvent Use

The 1996 estimated emissions from the consumer and commercial products category was 6.414 tpswd. The consumer products subcategory is currently being controlled through the federal consumer products rule (40 CFR Parts 9 and 59), which provides a 12.5% reduction in VOCs from the twenty-four regulated categories of consumer products including, air fresheners, antiperspirants and deodorants, engine degreasers, floor polish/waxes, hair sprays and insecticides. Stricter VOC emission limits patterned after those adopted by the California Air Resources Board would provide significant additional emission reductions. In addition to more stringent limits on many of the products covered under the federal rule, the California consumer products regulation addresses seven additional product categories, and would provide about a 28% reduction in the total consumer and commercial products inventory, or an additional 1.770 tpswd.

Although adoption of these more stringent consumer products limits would provide significant additional reductions, this is not a practicable option for several reasons. First and foremost, since most consumer and commercial products are centrally distributed within broad regional markets (e.g., via Boston, New York City, etc.), more stringent product limits applicable only to New Hampshire could result in severe restrictions on availability, and thus, on consumer choice. Even if New Hampshire were able to promulgate regulations requiring manufacturers to meet these standards by the 2002 ozone season, it would be difficult to secure the cooperation of manufacturers and distributors in such a compressed timeframe over such a small market and to the likely detriment of their customers. Adoption of the California Air Resources Board's consumer

²⁷ These methods are described in the EPA Alternative Control Techniques document entitled "*Control of VOC Emissions from the Application of Agricultural Pesticides*" (EPA-453/R-92-011).

products limits for one small state market is not a practicable or reasonable alternative to an OFRFG regulation.

5.2.6. Bioprocess Emission Sources

5.2.6.1. Bakeries

Bakery emissions from smaller, unlicensed sources were estimated at 0.041 tpswd in 1996. VOC emissions at bakeries can be controlled through a variety of measures, including thermal incinerators or carbon adsorption units. EPA has published an Alternative Control Techniques document for bakery oven emissions (EPA-453/R-92-017) which indicates that it may be cost-effective to control emissions from smaller bakeries. EPA estimates that catalytic oxidation would cost approximately \$2500/ton at certain bakeries with emissions of 25 tons per year, and \$2300/ton at certain 16 ton per year bakeries. In addition, the southern California South Coast Air Quality Management District has already adopted regulations to control the emissions from bakery ovens with a rated heat input capacity of 2 million BTU per hour or more and having daily emissions of 50 pounds of VOC or more. The length of time necessary to promulgate and implement controls on smaller bakeries, in combination with their very low uncontrolled emissions, makes further regulation of this source category impracticable and unreasonable.

5.2.7. Other Stationary Area Sources

5.2.7.1. Forest Fires

Total emission from forest fires in 1996 were not estimated by DES, but were expected to be small. Since New Hampshire already has an aggressive forest fire control program, additional emission reductions from this source category are impracticable and unreasonable.

5.2.7.2. Structure Fires

Structure fire emissions were estimated at 0.115 tpswd for 1996. Since structure fires are predominately accidental in nature, there is no potential for additional emission controls on this source category.

5.3. Mobile Sources

Mobile sources are non-stationary sources of pollution including onroad vehicles (cars, trucks, etc.) and nonroad sources such as planes, trains, and lawn/garden equipment. This section discusses the potential for reductions from these sources and is summarized in Table 5.3 on page 30.

5.3.1. Highway Mobile Sources

Highway mobile sources in Hillsborough, Merrimack, Rockingham, and Strafford counties were responsible for 44.890 tpswd of emissions in 1996, before accounting for controls. Highway mobile source emissions in 1996 were controlled by several programs, including the pre-1990 Federal Motor Vehicle Control Program, Post 1990 Motor Vehicle Emissions Standards (Tier 1), and the federal reformulated gasoline program.

There are a number of control strategies and programs that could provide additional mobile source emissions reductions, including:

5.3.1.1. Vehicle Inspection and Maintenance Programs

Enhanced motor vehicle inspection and maintenance (I/M) programs have the potential to provide significant VOC and NO_x emissions reductions from the mobile source sector. However, implementation of an enhanced I/M program in southern New Hampshire is not an option under the current direction of the New Hampshire Legislature. HB 1513,²⁸ passed and signed into law on May 21, 1998, repealed the state statute authorizing an enhanced I/M program in New Hampshire.

An Enhanced Safety Inspection Program (ESIP) was implemented in Hillsborough, Merrimack, Rockingham, and Strafford counties beginning January 1, 1999. The program incorporates a visual inspection of the catalytic converter and certain other emissions-related components in conjunction with the annual state safety inspection. Reductions for this program are estimated at 0.64 tpswd in 2003. Future plans include requirements for inspection and necessary repairs as indicated by the On-Board Diagnostic (OBD) II system beginning in 2003. Reductions from implementation of OBD are difficult to quantify as it is a preventative program as opposed to a traditional I/M test and repair program, but are assumed to be equal or greater than the ESIP. Emission reduction credits from either part of the enhanced safety inspection program are not sufficient to make I/M a practicable alternative to an OFRFG regulation.

5.3.1.2. Low Emission Vehicles

New Hampshire adopted regulations incorporating the National Low Emission Vehicle (NLEV) program requirements in 1999. NLEV is a federally enforceable, voluntary agreement between the state and automobile manufacturers to provide low emission vehicles in the state. This program took effect with the 2001 vehicle model year. While the NLEV program will provide significant emission reductions, program benefits are dependent upon fleet turnover, or the

²⁸ See <http://www.gencourt.state.nh.us/legislation/1998/HB1513.html>.

replacement of existing vehicles with new, cleaner cars and trucks. New Hampshire is legally committed to the NLEV program through the 2006 model year and thus additional reductions are not available from this sector.

5.3.1.3. Transportation Control Measures

Transportation control measures (TCMs) currently implemented or under consideration in New Hampshire have not yielded significant emission reductions, in part due to New Hampshire's low population density. These strategies generally work better in urban areas with large population centers. TCMs, like park-and-rides, can be effective in more urban settings, but there are relatively few (beyond those already implemented) that would be practical or cost effective in New Hampshire, where a significant part of the state is rural in nature. Ridesharing is used quite effectively in several population centers located in the southern part of the state, but even this measure has only a limited application because public transportation is not readily available in many areas. The increased use of TCMs is therefore not a practicable or reasonable alternative to an OFRFG regulation.

5.3.1.4. Voluntary Measures for Mobile Sources

On October 23, 1997, EPA released guidance on voluntary measures for mobile sources. Pursuant to this guidance, these measures must be part of the State Implementation Plan (SIP) in order for the State to take credit for the programs, necessitating a formal rulemaking process for any proposal. Further, these measures are limited to 3% of the total reductions needed for attainment in an area. While there are several voluntary measures available for use, there is not enough time to incorporate these measures into the SIP before the beginning of the 2002 ozone season. In addition, due to the rural nature of the State, these measures do not provide enough reductions to serve as an effective and practicable replacement for an OFRFG regulation.

5.3.2. Nonroad Mobile Sources

Nonroad mobile sources under this category are currently being controlled under a number of federally-implemented programs, and states are pre-empted from implementing additional controls on these sources. These source categories include:

5.3.2.1. Nonroad Engines or Vehicles

Nonroad emissions accounted for 15.970 tpswd in 1996. On July 3, 1995, EPA promulgated regulations establishing emission standards for new nonroad gasoline engines at or below 19 kilowatts effective for the 1997 model year. This

category includes lawn and garden equipment, outdoor power equipment, recreational equipment, construction equipment, farm equipment and marine vessels. Annual emissions reductions from this program will increase greatly in the first few years, then level off as product and/or fleet turnover is achieved. According to EPA, these new nonroad standards will result in a reduction in VOC emissions of 13.1% in 1997, 19.5% in 1998 and 23.9% in 1999, on a national basis. Phase II of the federal small nonroad engine standards begins in 2002 and will provide additional emissions reductions. However, the VOC portion of these additional reductions is uncertain, but are presumed to be insufficient to serve as an alternative to an OFRFG regulation.

5.3.2.2. Aircraft

Aircraft were responsible for an estimated 0.386 tpswd of emissions in New Hampshire in 1996. Prior to 1997, federal regulations on aircraft were limited to smoke and fuel venting emissions standards for all commercial jet aircraft classes. EPA also had hydrocarbon (HC) emission standards for newly manufactured aircraft gas turbine engines (TF, T3, and T8) with a thrust greater than 26.7kN. Separate HC emission standards exist for gas turbine engines employed in supersonic aircraft, and the smoke standards vary for the several different classes of engines. EPA regulations for smoke and VOC emissions have been in effect since 1984. In 1997, EPA promulgated regulations establishing NO_x and CO emission standards for commercial aircraft engines. This rulemaking affects only NO_x and CO emissions, and is therefore not a practicable alternative to an OFRFG regulation for achieving VOC reductions.

5.3.2.3. Locomotives

This source category generated emissions of only 0.004 tpswd in New Hampshire in 1996. The 1990 Clean Air Act Amendments mandated EPA to establish emission standards for a variety of previously unregulated nonroad mobile sources. Included in those requirements was a specific mandate to regulate emissions from locomotives. This rulemaking, which took effect in 2000, will affect railroads, locomotive manufacturers, and locomotive remanufacturers. This rulemaking does not provide a practicable alternative to an OFRFG regulation.

**TABLE 5.1 - Review of Point Source VOC Inventories in the
 Four-County Area**

A. Point Source Category (Section 5.1)	1990 VOC (tpswd)	1993 VOC (tpswd)	1996 VOC (tpswd)	Currently Controlled?	Potential for Additional Reductions?	Estimated Potential Additional 2002 Reductions* (tpswd)	Practical Option(s) for 2002?
1. Point Inventory	15.198	5.411	10.221	Yes	Yes	0.057	No
2. POTWs	0.292	0.296	0.306	No	Yes	0.241	No
3. TSDFs	n/a	n/a	n/a	n/a	n/a	n/a	No
4. Landfills	1.074	1.084	1.183	No	Yes	<0.23	No

* See Appendix for calculations

**TABLE 5.2 - Review of Area Source VOC Inventories (Part 1)
in the Four-County Area**

Area Source Category (Section 5.2)	1990 VOC (tpswd)	1993 VOC (tpswd)	1996 VOC (tpswd)	Currently Controlled?	Potential for Additional Reductions?	Estimated Potential Additional 2002 Reductions* (tpswd)	Practical Option(s) for 2002?
5.2.1 Gasoline/Fuel Dist.							
1. Tank Truck Unloading	6.608	4.937	1.431	Yes	No	--	No
2. Vehicle Refueling	7.303	5.361	1.669	Yes	Yes	0.038	No
3. Underground Tank Breathing	0.578	0.552	0.148	Yes	Yes	0.229	No
4. LUSTs	0.036	0.036	0.036	Yes	No	--	No
5. Tank Trucks in Transit	0.053	0.363	0.203	Yes	No	--	No
6. Petroleum Vessel Load/Unload	n/a	n/a	n/a	No	No		No
7. Aircraft Refueling	n/a	n/a	n/a	No	No	--	No
5.2.2. Stationary Fuel Use (commercial/residential)	0.124	0.090	0.096	No	No	--	No
5.2.3. Open Burning/On- Site Incineration	1.216	1.229	1.274	Limited	No	--	No
5.2.4. Catastrophic/ Accidental Releases							
1. Oil Spills	n/a	n/a	n/a	No	No	--	No
2. Rail Car, Truck, and Other Accidents	n/a	n/a	n/a	n/a	No	--	No

Continued on next page...

* See Appendix for calculations.

**TABLE 5.2 (cont'd.) - Review of Area Source VOC Inventories (Part 2)
in the Four-County Area**

Area Source Category (Section 5.2)	1990 VOC (tpswd)	1993 VOC (tpswd)	1996 VOC (tpswd)	Currently Controlled	Potential for Additional reductions?	Estimated Potential Additional 2002 Reductions* (tpswd)	Practical Options for 2002?
5.2.5 Stationary Area Source Solvent Use							
1. Dry Cleaning	n/a	N/a	n/a	No	No	--	No
2. Surface Cleaning	5.855	5.641	4.676	Yes	Yes	5.266	No
3. Surface Coating (Total)	13.317	14.457	11.253	Yes	Yes	1.347	No
4. Total Architectural (including traffic markings)	7.885	7.435	6.163	Yes	Yes	0.694	No
1. Auto Refinishing	4.304	4.528	2.592	Yes	Yes	**	No No
2. Small Industrial	1.128	2.494	2.498	Yes	Yes	**	No
3. Graphic Arts	1.436	1.914	1.983	Yes	Yes	1.563	No
4. Asphalt Paving	0.024	0.005	0.005	Yes	No	--	
5. Pesticide Application	1.070	0.815	0.696	No	Yes	0.392	No
6. Consumer/Commercial Solvent Use	6.957	7.066	6.414	Yes	Yes	1.770	No
5.2.6. Bioprocess Emissions Sources							
1. Bakeries	0.039	0.040	0.041	No	Yes	<0.064	No
5.2.7. Other Stationary Area Sources							
1. Forest Fires	n/a	N/a	n/a	No	No	--	No
2. Structural Fires	0.113	0.094	0.115	Yes	No	--	No

* See Appendix for calculations.

** Additional reductions included in total for architectural coatings.

**TABLE 5.3 - Review of Mobile and Biogenic Source VOC Inventories in
the Four-County Area**

Mobile Source Category (Section 5.3)	1990 VOC (tpswd)	1993 VOC (tpswd)	1996 VOC (tpswd)	Currently Controlled?	Potential for Additional Reductions?	Estimated Potential Additional 2002 Reductions* (tpswd)	Practical Option(s) for 2002?
5.3.1. Highway Mobile Sources ²⁹	74.100	58.831	44.890	Yes	No	--	No
5.3.2. Non-Highway Mobile Sources	--	--	--	--	--	--	--
1. Nonroad (<i>Total 2,4-stroke, diesel, - includes construction and marine equip.</i>)	13.936	15.414	15.970	No	No	--	No
2. 2-Stroke Engines	7.457	9.402	9.742	No	No	--	No
3. 4-Stroke Engines	6.012	5.138	5.323	No	No	--	No
4. Diesel	0.468	0.874	0.906	No	No	--	No
5.3.3. Aircraft	3.739	0.478	0.386	No	No	--	No
5.3.4. Locomotive	0.002	0.011	0.004	No	No	--	No
Biogenic Sources	562.06	562.06	562.06	n/a	No	--	--
Total NH Anthropogenic VOC Emissions	160.96	131.56	109.16	--	--	11.89	--
Percent Anthropogenic (%)	22%	19%	16%	--	--	--	--

* See Appendix for calculations.

²⁹ The VOC reductions that were realized in New Hampshire between 1990 and 1996 are the result of new vehicle standards (i.e., Tier 1 federal standards (1994), New Hampshire's participation in the NLEV program, federal RFG, and New Hampshire's Enhanced Safety Inspection Program). New Hampshire is pursuing relief from CAA Section 211(c)(4)(A) via this submittal, to allow for its OFRFG rule to replace federal RFG as a VOC control strategy. Additional reductions are possible from the on-highway mobile source sector with enhanced vehicle I/M. However, as discussed in Section 5.3.1.1, the State's Legislature has preempted the implementation of any enhanced I/M other than the State's Enhanced Safety Inspection Program.

6. CONCLUSIONS

DES utilized its 1996 emissions inventory and source categories to determine whether there are any practicable and reasonable alternatives to the adoption of the New Hampshire OFRFG rule when the state opts out of the Federal RFG gasoline program in Hillsborough, Merrimack, Rockingham, and Strafford counties. DES reviewed all point, area and mobile source emission categories, and analyzed each for potential additional reductions using the EPA Region I Staff Paper *"Possible Additional Control Measures to Help the New England States Reach Attainment"* (1997) and the STAPPA/ALAPCO report *"Meeting the 15-Percent Rate of Progress Requirement Under the Clean Air Act: A Menu of Options."*

DES identified the potential for additional emission reductions from several source categories and strategies, including the expansion of Stage II vapor recovery requirements; more stringent AIM, consumer products and autobody refinishing emission limits and reducing the major source and Env-A 1204.05 non-CTG VOC RACT applicability thresholds. All of these would require additional study to better quantify the extent of the potential emission reductions; the cost to the regulated community, consumers and the State; cost-effectiveness; and supply and public acceptance issues. None of these potential strategies could be implemented before the 2002 ozone season, and those requiring the installation of emission controls would require an even longer period of time before reducing emissions. **Even assuming that all of the possible emission reductions discussed above could be made before the 2002 ozone season, only about 80% of the 15 tpswd from the federal RFG program could be made-up without a fuel measure alternative.**

Monitored air quality has improved in New Hampshire's ozone nonattainment areas (the four-county area) since the implementation of programs under the CAA. Based on 1998, 1999, 2000, and 2001 monitoring data, all monitors within New Hampshire showed attainment of the one-hour and the eight-hour national ambient air quality standards for ozone. The Southern NH Serious Nonattainment Area is considered to be in monitored nonattainment, however, because it is part of the Boston-Salem-Lawrence Consolidated Metropolitan Statistical Area (CMSA). This CMSA includes monitors in southeastern Massachusetts that experienced violations of the NAAQS for ozone during the 1999-2001 time frame, violations unrelated to New Hampshire emissions. However, it is clear given the progressive improvement in monitored air quality in New Hampshire that a fuel control measure has and will play a significant role in providing the reductions necessary for the state to achieve attainment. All programs that contribute to attainment in the four-county area remain in place, including reformulated gasoline. However, since RFG is no longer an option in New Hampshire under orders of the Governor and Legislature, DES has determined that an OFRFG rule is the only reasonable and practical measure the State can take to attain and maintain the ozone standard. As a result, the State hereby requests EPA's expeditious approval of this waiver request, enabling New Hampshire to legally enforce its OFRFG rule.

APPENDIX

Estimation Methodologies for Calculating Additional Reductions

POINT SOURCES (see Table 5.1)

* - A 2% annual growth factor has been applied to grow 1996 emissions throughout this appendix to 2002 (a 1.1261 multiplier).

A.1. Inventoried Point Sources (see section 5.1.1):

Reducing non-CTG VOC RACT source threshold to 10 tons per year (actual)

Reducing the non-CTG VOC RACT threshold to 10 tons per year (actual) would impose control requirements on an additional 3 sources:

Source Name	1996 (tpy)	New Limit (tpy)
Avilite Corp	20.7	10
Peterboro Basket Co.	36.7	10
Boyce Highlands	34.2	10

These 3 sources accounted for 91.6 tpy in 1996 (0.251 tpswd). DES estimates that these sources could reduce VOC emissions by an additional 20% through the application of non-CTG VOC RACT:

$$0.20 \times 0.251 \text{ tpswd} \times 1.1261^*(\text{growth multiplier}) = 0.057 \text{ tpswd (reduced)}$$

Therefore, reducing the non-CTG VOC RACT source threshold to 10 tons per year would provide an additional 0.057 tpswd in emission reductions in 2002.

A.2. Publicly Owned Treatment Works (POTWs) (see section 5.1.2)

Application of controls on POTWs

The range of potential reductions from the application of emission controls on POTWs range from 50 to 90% according to a STAPPA/ALAPCO report (*"Meeting the 15-percent Rate of Progress Requirement Under the Clean Air Act: A Menu of Options."*) Assuming an average reduction as the mid-point of this range (70%), additional reductions of 0.241 tpswd are possible for 2002.

$$0.70 \times 0.306 \text{ tpswd} \times 1.1261^*(\text{growth multiplier}) = 0.241 \text{ tpswd (reduced)}$$

AREA SOURCES (see Table 5.2)

A.3. Vehicle Refueling (see section 5.2.1.2)

Increase Stage II requirements to all refueling stations regardless of fuel throughput

DES estimates that about 84% of all fuel dispensed in the four southeastern counties is done through Stage II emissions controlled equipment (stations with greater than 420,000 gallons dispensed per year). Removing the minimum throughput for requiring Stage II controls provides an additional reduction of 0.038 tpswd.

$$(0.16) (433,723,000 \text{ gal}) = 63,395,680 \text{ gallons dispensed through Stage II equipment}$$

$$\frac{16\% \text{ (of throughput uncontrolled)}}{(3.61 \text{ g/gal (w/o Stage II)} - 0.77 \text{ g/gal (w/ Stage II)})} = \frac{100\% \text{ (of throughput)}}{X}$$

$$X = 0.178 \text{ g/gal}$$

$$\begin{aligned} (0.178 \text{ g/gal}) (69,395,680 \text{ gal/yr}) (1.1261 * (\text{growth multiplier})) &= 13.91 \text{ tons/yr} \\ &= 0.038 \text{ tpswd reduced} \end{aligned}$$

A.4. Underground Tank Breathing (see section 5.2.1.3)

Installation of pressure valve (P-V) vents

Installing P-V vents that are assumed to have a 100% control effectiveness would reduce all remaining emissions from this category.

$$(1.0) (0.203 \text{ tpswd}) (1.1261 * (\text{growth multiplier})) = 0.229 \text{ tpswd (reduced)}$$

A.5. Surface Cleaning (see section 5.2.5.2)

Prohibiting the use of non-aqueous cleaning agents would eliminate all this category's emissions. They are currently controlled at a

$$(1.0) (4.676 \text{ tpswd}) (1.1261 * (\text{growth multiplier})) = 45,266 \text{ tpswd (reduced)}$$

A.6. Surface Coatings (see section 5.2.5.3)

Option to further controls on auto refinishing operations

1. Low-VOC surface cleaners and solvents.

According to the STAPPA/ALAPCO publication, "Meeting the 15-Percent Rate of Progress Requirement Under the Clean Air Act: A menu of Options," surface cleaners and cleanup solvents currently have average VOC emissions of 6.75 lbs/gal, and are responsible for approximately 26.3% of all auto refinishing emissions. These products

are not regulated by the federal auto refinishing rule, but are regulated by the South Coast Air Management District (SCAQMD) which currently limits their VOC content to 0.58 lbs/gal. Surface cleaners and cleanup solvents were responsible for 0.682 tpswd of this categories 2.592 tpswd emissions:

$$(0.263) (2.592 \text{ tpswd}) = 0.682 \text{ tpswd}$$

Potential benefits of SCAQMD VOC limits:

$$\frac{0.58 \text{ lbs/gal (SCAQMD limit)} (0.682 \text{ tpswd})}{6.75 \text{ lbs/gal (current content)}} = 0.059 \text{ tpswd}$$

$$\text{or } (0.623 \text{ tpswd}) (1.1261 * (\text{growth multiplier})) = 0.702 \text{ tpswd (reduced)}$$

2. High efficiency application equipment.

The Bay Air Quality Management District (BAQMD) estimated that high volume low pressure spray equipment (HVLP) reduced coatings emissions by 20 to 40%.

Using the mid-point of the estimate (30%):

Estimating emissions due to coatings only under federal emission limits:

$$2.592 \text{ tpswd} - 0.682 \text{ tpswd} = 1.91 \text{ tpswd}$$

$$(0.30) (1.91 \text{ tpswd}) (1.1261 * (\text{growth multiplier})) = 0.645 \text{ tpswd (reduced) from HVLP}$$

Combined benefit of SCAQMD VOC content limits and BAQMD HVLP application equipment to New Hampshire surface coating operations is 1.347 tpswd.

Option to further controls on architectural, industrial, and maintenance coatings

SCAQMD limits the VOC content of architectural, industrial, and maintenance coatings to 28%. Adopting this limit:

$$0.28 \times 7.703^{30} \text{ tpswd} = 2.157 \text{ tpswd}$$

Currently the federal AIM rule (20% reduction) is applied in New Hampshire:

$$0.20 \times 7.703 \text{ tpswd} = 1.541 \text{ tpswd}$$

$$\text{Net benefit: } (2.157 - 1.541) \times 1.1261 * (\text{growth multiplier}) = 0.694 \text{ tpswd (reduced)}$$

³⁰ Emission factor of 5.1 lbs/capita, before 20% federal AIM reduction was applied to the 1996 nonattainment area population of 848,154 over 365 operational days per year. A summer adjustment factor of 1.3 was used to arrive at 7.703 tpswd.

A.7. Graphic Arts (see section 5.2.5.4)

Requiring all graphic arts processes to install add-on control equipment or use low-VOC inks

DES estimates that these measures would provide about a 70% reduction in emissions.

$$(0.70) (1.983 \text{ tpswd}) (1.1261 * (\text{growth multiplier})) = 1.563 \text{ tpswd (reduced)}$$

A.8. Pesticide Application (see section 5.2.5.6)

DES estimates that a reduction of up to 50% of VOC emissions from pesticide application is possible by using a lower VOC solvent base.

$$(0.50) (0.696 \text{ tpswd}) = 0.348 \text{ tpswd (reduced)}$$

A.9. Commercial and Consumer Solvent Use (see section 5.2.5.7)

Adopt current California VOC limits on consumer products

Adopting California limits would regulate an additional 7 product categories, providing an additional 28% VOC reduction.

$$(0.28) (6.414 \text{ tpswd}) = 1.796 \text{ tpswd (reduced)}$$

From this, the benefits of the federal program are subtracted from the entire category.

$$(1.796 \text{ tpswd} - (0.125 \times 1.796 \text{ tpswd})) \times 1.1261 * (\text{growth multiplier}) = 1.770 \text{ tpswd (reduced)}$$

A.10. Bakeries (see section 5.2.6.1)

Any potential reductions from this category would be minimal (< 0.064 tpswd).

$$(0.057 \text{ tpswd}) (1.1261 * (\text{growth multiplier})) = 0.064 \text{ tpswd (reduced)}$$

ATTACHMENT 6

Adoption of Env-A 1611

EVIDENCE OF THE RULE'S ADOPTION

EVIDENCE OF LEGAL AUTHORITY

Laws of New Hampshire, RSA 125-C:4
Rulemaking Authority; Subpoena Power

COPY OF THE ACTUAL RULE

EVIDENCE THAT NEW HAMPSHIRE FOLLOWED ALL
PROCEDURAL REQUIREMENTS

REQUEST FOR FISCAL IMPACT STATEMENT

FISCAL IMPACT STATEMENT

RULEMAKING NOTICE FILING

RULEMAKING REGISTER

**ANNOTATIONS TO INITIAL PROPOSAL FROM THE OFFICE OF
LEGISLATIVE SERVICES**

REQUEST FOR AMENDED FISCAL IMPACT STATEMENT

AMENDED FISCAL IMPACT STATEMENT

FINAL PROPOSAL FILING

**ANNOTATIONS TO THE FINAL PROPOSAL FROM THE OFFICE OF
LEGISLATIVE SERVICES**

ADOPTED RULE

PRELIMINARY OBJECTION TO FINAL PROPOSAL

RESPONSE TO PRELIMINARY OBJECTION

**ANNOTATIONS TO THE RESPONSE TO PRELIMINARY OBJECTION
FROM THE OFFICE OF LEGISLATIVE SERVICES**

**APPROVAL OF THE RULE BY THE JOINT LEGISLATIVE COMMITTEE
ON ADMINISTRATIVE RULES**

EVIDENCE OF PUBLIC NOTICE

CERTIFICATION OF PUBLIC HEARING

**COMPILATION OF PUBLIC COMMENTS AND NEW
HAMPSHIRE'S RESPONSE THERETO**

ATTACHMENT 7

**Evidence of Public Notice of SIP Revision Hearing and
Comment Period**

ATTACHMENT 8

Certification of Hearing

ATTACHMENT 9

**Compilation of Public Comments and DES's Response
Thereeto**

Compilation of Public Comments and DES's Response Thereto

Comments were received from the American Petroleum Institute (API) and the Environmental Protection Agency.

API comments

A complete text of API's comments is attached. New Hampshire's principal response relative to comments received from API is that, in general, all of these comments would be more appropriately targeted toward a request for comments by EPA relative to a proposal to approve this SIP revision. New Hampshire is the party proposing the SIP revision, and API's comments are largely focused on the agency charged with ruling on the proposed SIP revision. However, DES offers the following response to API's comments.

1. *"A Federal Solution is Best"* – DES concurs that a federal solution (including the removal of the oxygen mandate from the Clean Air Act) is the best option for reducing the MtBE content of RFG. However, significant time and effort has been directed toward this issue by the NH Congressional delegation, Governor Shaheen, and numerous state agency officials over the past few years, with very little movement in Congress. The issue is now connected to passage of comprehensive energy legislation currently under consideration in Congress, but there is little certainty with regard to that process. Both the Governor and General Court were well aware of these efforts, and the little fruit they have borne, when they directed DES to opt out of the federal RFG program. Similar frustration on the part of legislative bodies around the country has led several states to implement bans of MtBE. While a federal solution would be best, New Hampshire can no longer afford to wait for one to materialize, and DES has been directed by New Hampshire's Governor and Legislature to take the actions outlined in this SIP revision.
2. *"Early Opt-out of RFG is not a Legal Option"* – This comment is best directed to EPA. DES would, however, point out that New Hampshire has not technically requested an early opt-out, per se, but requested that EPA revise their opt-out rule or otherwise provide relief from this requirement in order to address the urgency of the State's MtBE contamination problem. In her letter to EPA Administrator Whitman accompanying the State's *Petition to Opt New Hampshire Out of the Federal Reformulated Gasoline Program*, Governor Shaheen stated

"Since I understand that a strict interpretation of the applicable federal regulations (i.e., 40 CFR 80) prevents New Hampshire from opting out of the RFG program prior to January 1, 2004, I further request that EPA address these regulations to provide for an earlier opt out date and/or such other relief as may prevent further MTBE contamination of New Hampshire's water resources between now and 2004."

- (also see response to EPA comments regarding waiver analysis years below.)
3. “EPA’s Authority to Approve Nonidentical Fuel Controls is Limited” – Again, this comment is more appropriately directed to EPA. The State has provided analysis and documentation pertinent to the SIP revision submitted to EPA, including the State’s *Application for Relief from Federally Preempted Gasoline Standards*, included as an attachment in the SIP revision submittal.
 4. “New Hampshire’s OFRFG does not meet the criteria of the Clean Air Act (CAA)” – In this comment API suggests that New Hampshire must submit its entire rule to EPA for consideration and approval into the SIP. DES does not concur that the CAA requires EPA to consider the provisions of OFRFG “in its entirety”.

As stated in the SIP, the standards for metals, benzene, toxics, and winter (non VOC-controlled) NO_x have only been included in New Hampshire’s rule to provide consistency for the refining industry with similar standards under the federal rule, and to maintain the air quality benefits already achieved by federal RFG.

New Hampshire’s rule does not regulate the oxygen content of gasoline initially certified as OFRFG. However, the addition of *additional* oxygenate to gasoline *already* certified as OFRFG is prohibited. This prohibition is identical to, and consistent with, a similar prohibition in the federal RFG rule at 40 CFR 80.78(a)(6)¹ (absent the provision for an oxygenated fuels program, which New Hampshire does not have).

5. “State Enforcement” – DES does not believe there is any requirement that enforcement provisions be included in the OFRFG rule. The SIP revision clearly addresses DES’s compliance plan, including downstream enforcement. Specifically, the SIP revision states,

“DES authority for enforcement of its rules is found in New Hampshire Revised Statutes Annotated (RSA) Chapter 125-C:6, [Powers and Duties of the Commissioner](#) and [125-C:15, Enforcement](#).² DES intends to conduct routine random sampling on both a scheduled and unscheduled basis at retail gasoline distribution facilities throughout the four county area. Monitoring at the retail level is necessary as the wholesale storage and distribution of gasoline other than OFRFG (i.e., conventional, Maine Low RVP, etc.) in the covered area is not prohibited by the State rule.

The DES monitoring and enforcement program will be conducted in conjunction with compliance activities for other DES programs directed at gasoline distribution facilities, such as underground storage tank inspections and/or Stage II vapor recovery testing and inspections. Samples will be field

¹ See http://www.access.gpo.gov/nara/cfr/waisidx_00/40cfr80_00.html

² See <http://www.gencourt.state.nh.us/rsa/html/X/125-C/125-C-6.htm> and <http://www.gencourt.state.nh.us/rsa/html/X/125-C/125-C-15.htm>.

tested for gasoline parameters necessary to run the Complex model³ found at 40 CFR 80.45 with the PetroSpec GS-1000. Samples that do not meet the performance standards for OFRFG contained in Env-A 1611 will be submitted to a gasoline-testing laboratory for confirmation tests for enforcement purposes in accordance with the testing methods at 40 CFR 80.46.⁴ ...

Upon confirmation, non-compliant sampling results will be referred for appropriate enforcement action in accordance with the procedures in RSA 125-C:15.”

It is noted that EPA previously commented (at the time of New Hampshire's rule adoption) on enforcement issues. Since EPA did not further comment on enforcement with regard to this SIP revision, DES believes that this SIP revision has adequately addressed EPA's prior comments.

With regard to the comment that “(OFRFG) ... is still a refinery based performance standard and is not enforceable by NH”, the rule applicability is clearly defined in section 1611.02, which states

“This part shall apply to any person who sells, offers for sale, dispenses, supplies, offers for supply, stores, transports, or causes the transportation of gasoline in New Hampshire for the purpose of dispensing it as a motor fuel in the counties of Hillsborough, Merrimack, Rockingham, and Strafford.”

Rule compliance will be determined at the retail and/or distributor level, and appropriate enforcement action will be directed at the responsible party in the distribution chain.

6. *“Necessity Showing”* – New Hampshire met this requirement with the December, 2001 submittal of the State's *Application for Relief from Federally Preempted Gasoline Standards*, included as an attachment in the SIP revision submittal.
7. *SIP Revisions* – This SIP revision revises all prior SIP revisions that rely on federal RFG. However, in order to address this comment DES will revise the language in the proposed revision (referring to these two previous SIP revisions) that states *“New Hampshire will replace federal RFG as a VOC and NOx control measure by adopting rules to implement OFRFG”* to *“New Hampshire has replaced federal RFG as a VOC and NOx control measure by adopting rules to implement OFRFG”*.

EPA Comments

1. *Necessity showing for 2004* – DES reiterates Governor Shaheen's request for EPA to revise their opt-out rule at 40 CFR 80.72 or otherwise provide relief to New

³ See http://www.access.gpo.gov/nara/cfr/cfrhtml_00/Title_40/40cfr80_00.html

⁴ See http://www.access.gpo.gov/nara/cfr/cfrhtml_00/Title_40/40cfr80_00.html

Hampshire to allow for reducing the MtBE content of gasoline supplied to the State. However, EPA has yet to act upon this request. Therefore, the State submits this SIP revision and contends that the previously submitted necessity demonstration analysis is adequate to support the State's request, and that the analysis will not be materially different for 2003. DES further requests a timely formal response from EPA relative to New Hampshire's request to revise 40 CFR 80.72 or other wise provide relief to allow for a legal opt-out prior to 2004. In the event that EPA formally denies New Hampshire's request, DES will submit a revision to its necessity determination to include 2004 as an analysis year.

2. *Submittal of OFRFG rule for approval* – Specifically, EPA asks that New Hampshire confirm that Parts Env-A 1611.06(a)(3) through (5) are not intended to be submitted to EPA in the final SIP revision submitted to EPA. New Hampshire confirms that only paragraphs (1) and (2) of Env-A 1611.06(a) are being submitted for EPA approval into the New Hampshire SIP. Section 4.0 of the SIP revision states “...the OFRFG rule includes performance standards for toxic compounds, benzene, and wintertime NOx emissions reductions. These standards are included only for consistency with the current RFG regulations, and are not being submitted for EPA approval.”
3. *Establishing the air quality need* – the SIP revision states (in section 4.4), “Specifically, the photochemical modeling conducted to demonstrate attainment in this SIP revision assumed that federal RFG would be required in New Hampshire's four-county nonattainment area.” Thus, since RFG was assumed in the modeling that demonstrated attainment, those NOx and VOC benefits realized from the federal RFG program must be replaced when New Hampshire opts-out of the federal program in order to ensure attainment of the ozone NAAQS.
4. *“Analysis of the emissions benefits of OFRFG”* – the SIP revision states (in section 4.0),

“OFRFG will be required in the same areas of New Hampshire where federal RFG is currently required (i.e., Hillsborough, Merrimack, Rockingham, and Strafford counties), and will – by definition – provide reductions in ozone season VOC and NOx emissions equivalent to federal RFG.”

And further (in section 4.4),

“As a result, no change from the VOC and NOx emission reduction values in the pending SIP revision is expected.”

OFRFG will provide benefits equivalent to federal RFG. In the event that a gasoline meeting OFRFG specifications with reduced MtBE is not available, or supply is disrupted, federal RFG may be supplied as allowed by the rule. The VOC and NOx standards for OFRFG are substantively identical, and thus New Hampshire predicts that OFRFG will provide the same benefit (7.86 tons per

summer day VOCs, 2.07 tons per summer day NOx⁵) in New Hampshire's four-county nonattainment area as federal RFG.

⁵ Represents calculated benefits for federal RFG in the year 2002 using MOBILE 6 with state specific average DVMT, VMT mix, and vehicle age registration distribution data.

**COMMENTS TO THE NEW HAMPSHIRE
DEPARTMENT OF ENVIRONMENTAL SERVICES**

**Revision of the
New Hampshire
State Implementation Plan
for the Adoption of Measure to
Opt-Out of the
Federal Reformulated Gasoline Program**

SEPTEMBER 13, 2002

Thank you for the opportunity to comment on the revision to the New Hampshire (NH) State Implementation Plan (SIP). New Hampshire's SIP revision would replace federal RFG as an ozone season control measure for VOCs and NOx by adopting rules to implement "Oxygen Flexible Reformulated Gasoline" (OFRFG). These comments are submitted on behalf of the American Petroleum Institute (API). API represents over 400 companies engaged in all aspects of the oil and gas industry, including exploration, production, transportation, refining and marketing.

API appreciates the efforts of the New Hampshire General Court and the Department of Environmental Services to try and find a way to reduce the levels of MTBE in gasoline. However, we do not support the NH OFRFG fuel regulations as a means to achieve a reduction in the amount of MTBE in gasoline. The rule would create a fuel unique to only four counties in New Hampshire which would further strain the supply, transportation and distribution of gasoline.

Summary

A Federal Solution is Best

We continue to urge New Hampshire to work with us to achieve a federal solution on this difficult issue. API supports the fuels provisions in the Senate-passed National Energy Policy Act of 2002 (H.R. 4). This proposal addresses the problems that have arisen in the RFG program, and at the same time, offers refiners the flexibility they need to provide clean fuels to consumers. In addition, it maintains the existing benefits of the RFG program. The bill eliminates the two percent oxygenate requirement and replaces it with a more flexible renewable fuels standard (RFS). The RFS does not require renewable fuels in every gallon of gasoline and includes a credit banking and trading program that will allow renewable fuels to be used where it makes the most economic sense. The RFS phases in beginning with 2.3 billion gallons in 2004, growing to 5 billion gallons in 2012. It also phases down MTBE over a four-year period, providing the lead time refiners need.

Early Opt-out of RFG Is Not A Legal Option

New Hampshire's application to EPA for approval of OFRFG into New Hampshire's SIP pre-supposes the State's early opt-out from the reformulated gasoline program. However, EPA approval of OFRFG is premature and is not needed until 2004. Under federal regulations, New Hampshire is required to participate in the RFG program until December 31, 2003. States had the ability to opt-out from the RFG program in late 1997, but New Hampshire decided to continue to participate in the RFG program. Those regulations specifically indicated that if states wished to continue to participate in RFG, they did so knowing that they would not be able to opt-out until the end of 2003. The rationale for the EPA regulation is that the petroleum industry undertook capital and expense investments in refining, distribution and retail facilities to comply with the RFG rules. Ample time and opportunity are needed to protect the industry from stranded assets. An opt-out from the RFG program prior to 2004 is not a legal option for New Hampshire.

After December 31, 2003, if New Hampshire chooses to opt-out of the RFG program, it may do so if it modifies its SIP and replaces the emission reductions from RFG relied on for attainment of the National Ambient Air Quality Standard (NAAQS) for ozone. Thus, New Hampshire's analysis under section 211(c)(4)(C) should apply to New Hampshire's air quality situation beginning in January 2004.

EPA's Authority to Approve Nonidentical Fuel Controls is Limited

The purpose of the Clean Air Act's fuels preemption provision is to allow special State fuels only as a last resort, after exhausting all non-fuel alternatives. Thus, EPA's authority to approve state fuel controls is limited--it may approve only state fuel controls that are "necessary" to achieve a NAAQS. EPA submitted comments in NH's rulemaking process discussing how to demonstrate necessity under section 211(c)(4)(C) and commented on the further analysis New Hampshire must perform to make the showing. (EPA Comments to New Hampshire DES dated February 19, 2002)

Under section 211(c)(4)(A) of the Clean Air Act ("CAA" or "Act"), if a state seeks to impose nonidentical controls related to, or connected with, a fuel characteristic or component that is subject to EPA regulation, the state is preempted. The Act provides an exception if the state gets EPA's prior approval in accordance with section 211(c)(4)(C).

New Hampshire's OFRFG does not meet the criteria of the Clean Air Act (CAA)

New Hampshire's OFRFG does not meet the criteria of 211(c)(4)(C) of the Clean Air Act (CAA). The SIP Revision states that the rule is patterned after the federal RFG program rules with certain exceptions for State-specific conditions. New Hampshire also states that "[t]hese standards are included only for consistency with the current RFG

regulations, and are not being submitted for EPA approval.” New Hampshire is attempting to choose which of its fuel controls EPA reviews for approval. That is not the way the CAA works. If a state controls or prohibits fuel components or characteristics, the State fuel, in its entirety --all the prohibitions or controls, whether performance or content standards—must be approved under the criteria of 211(c)(4)(C). A State does not get to choose which fuel controls EPA reviews. Thus, every fuel control or prohibition in the OFRFG regulation must be approved by EPA.

The rule sets the following controls or prohibitions for fuel characteristics or components:

Section 1611.06:

- Content standard for benzene – 1.3% by volume
- performance standard for toxic compounds – 20% reduction
- performance standard for VOCs – 23.4%
- performance standard for NOx, VOC-controlled – 3.0% reduction
- performance standard for NOx, not VOC-controlled – 2.5% reduction
- Prohibition on lead
- Prohibition on adding oxygenates to certified OFRFG (1611.10(e))

In conventional gasoline, EPA controls each of the components listed above, that New Hampshire seeks to control, and the OFRFG controls are not identical to those federal controls. Thus, the state is preempted and must have EPA approval of the fuel in a SIP submission. EPA can approve a state fuel control in a SIP only if EPA determines that such controls are necessary to achieve the NAAQS that the SIP implements. The State has not shown that it needs any of these controls in order to achieve a NAAQS.

In conventional gasoline, EPA controls volatility through its Reid Vapor Pressure (RVP) standard, so the VOC performance standard is preempted. EPA controls NOx by way of its sulfur content standard, so the NOx standard is preempted. EPA controls benzene and toxics in its toxics performance standard, so both benzene and toxics are preempted. EPA prohibits lead in gasoline, so NH is preempted from doing so.

NH states in its SIP revision that it does not regulate oxygen content in any way (At page 4). API disagrees. The rule does regulate oxygen -- the rule prohibits the addition of oxygenates to certified OFRFG. Oxygenate use in conventional gasoline is limited by EPA's antidumping regulations and is also a factor in the NOx equations for conventional gasoline under EPA's Complex Model. 40 C.F.R. sec. 80.45. EPA has acknowledged that these federal oxygenate controls could require states to get EPA's prior approval before deviating from the existing federal requirements. May 26, 1998 letter from Margo Oge, EPA, to Dr. Otto Ravenholt, Chief Health Officer, Clark County Health District. New Hampshire must show that the prohibition of oxygenate use is “necessary” to achieve attainment of a NAAQS. New Hampshire has not made such a showing.

State Enforcement

New Hampshire has not demonstrated that it has an enforcement scheme for its OFRFG program. EPA commented that an adequate enforcement scheme must be included in the State rule and the SIP revision submitted for EPA approval. EPA listed the various criteria that would be part of an adequate enforcement scheme. (EPA Comments to New Hampshire DES dated February 19, 2002, Enclosure 1) We agree with those criteria.

The State's rule does not provide for a downstream compliance program. Although the State sets performance standards for VOCs and NOx using a per-gallon basis, this is still a refinery based performance standard and is not enforceable by NH. The State said in its SIP Revision that it intended to adopt the per-gallon minimum for VOCs and NOx, as in the EPA RFG regulations, but the State's regulation does not specify that per-gallon minimum for downstream testing. In addition, the State will not be able to enforce the toxics performance standard.

Necessity Showing

NH did not make the showing required by the CAA. The State must list the non-fuel measures it has considered, including the emissions reductions such measures would provide. Then the State must explain why those measures would not be reasonable or practicable to implement. New Hampshire has not made this showing.

SIP Revisions

In addition, if NH had the legal option of opting out of federal RFG and replacing it with another fuel, it would need to revise its SIP accordingly, to show that it was substituting another measure for the RFG. Yet NH states that it does not intend to withdraw two pending SIP revisions (at pages 7 and 8) although the state acknowledges that opting out of RFG could affect the administrative completeness and the ultimate approval of this SIP revision. The state says the emissions reductions are the same using OFRFG, so they won't bother revising the Post-1996 Reasonable Further Progress Plan SIP Revision or the 2003 Ozone Attainment Demonstration SIP Revision. If NH wants to replace RFG with another measure, when it does have legal authority to opt out of RFG, the state must revise all parts of its SIP that rely on RFG.

Conclusion

For the reasons stated above, the proposed SIP revision to provide for early opt-out of RFG and the adoption of OFRFG should not be approved.

Michael Fitzgerald
Department of Environmental Services
6 Hazen Drive
P.O. Box 95
Concord, NH 03302-0095

Dear Mr. Fitzgerald:

Thank you for the opportunity to provide comments on the proposed "Revision to the New Hampshire State Implementation Plan for the Adoption of Measures to Opt-out of the Federal Reformulated Gasoline Program" dated August, 2002. Once submitted to EPA for approval, we understand that you intend that this represents the full array of information which would be required to opt-out of the federal reformulated gasoline program (RFG) as defined in 40 CFR section 80.72.

In this proposed SIP revision, you include information related to where federal RFG is used and how it is relied upon for air quality control purposes in your State. This submittal indicates that RFG is an integral part of a variety of air quality control plans, and that you are replacing federal RFG with a state adopted fuel control known as "Oxygen- Flexible Reformulated Gasoline" (OFRFG), which is included in this package. That rule was adopted by the State of New Hampshire on May 2, 2002. We understand that the purpose of this submittal is to support your petition for opt-out from the federal reformulated gasoline program. Further, based on the December 7, 2001 letter from Governor Shaheen, we understand that certain portions of this OFRFG rule (Env-A 1611.06(a)(3)through (5)) are not intended to be submitted to EPA for approval into the New Hampshire SIP and, for that reason, EPA is not commenting on those portions of this rule. Please confirm this understanding in the final SIP revision submitted to EPA.

Our comments on this proposed revision are contained in the enclosure. It includes comments on this draft document and also reiterates some comments previously articulated on February 19, 2002 on the "Application for Relief from Federally Preempted Gasoline Standards" which were not addressed.

Finally, we are continuing to consider New Hampshire's request to opt-out of RFG as soon as possible, and earlier than the January 1, 2004 date that New Hampshire is presently committed to under the federal rule. We expect to be able to better consider your request for early opt-out at the time your State completes a SIP submission for OFRFG, replacing the emission reductions currently relied upon in the SIP.

If you or your staff have any questions, please contact Bob Judge at (617) 918-1045.

Sincerely,

Michael Kenyon, Chief
Air Programs Branch

cc: Bob Scott, NH DES
Kent Finemore, NH DES

Enclosure

Enclosure

A. In appendix B of the document entitled “Revision to the New Hampshire State Implementation Plan for the Adoption of Measures to Opt-out of the Federal Reformulated Gasoline Program,” it should be noted that the Post- 1996 Reasonable Further Progress Plan was approved by EPA on April 16, 2002 (67 FR 18493).

B. Comments on meeting Section 211(c)(4) of the Clean Air Act

When the State submits the complete SIP revision package including its permanent OFRFG rule to EPA for SIP approval, EPA will need to evaluate whether the State has met the requirements of both section 110 and section 211(c)(4) of the Clean Air Act. Section 211(c)(4)(A) of the Clean Air Act preempts state fuel controls respecting fuel characteristics or components for which EPA has adopted a federal control under Section 211(c)(1).¹ One exception to preemption is provided in Section 211(c)(4)(C) of the Act. This provision allows EPA to approve state fuel controls in a SIP if EPA determines that such controls are necessary to achieve the NAAQS that the SIP implements.

To demonstrate necessity, under section 211(c)(4)(C), the State needs to: (1) identify the quantity of emission reductions needed to achieve the relevant NAAQS; (2) identify all reasonable and practicable non-fuel control measures and the quantity of reductions each would achieve; (3) show that even with implementation of all reasonable and practicable non-fuel control measures, the state would need additional emission reductions to meet the relevant NAAQS on a timely basis; and (4) show that the state OFRFG requirement would supply some or all of such additional reductions. The state also needs to explain which, if any, of the identified non-fuel control measures were found to be unreasonable or impracticable. Your December 7, 2001 “Application” is intended to make this necessity demonstration.

In this context, we have the following comments:

1. *Establishing the air quality need:* The State has not identified the quantity of emission reductions needed to reach attainment of a NAAQS. Although the State has indicated that federal RFG would provide 15.6 tons per day (tpd) of VOC reductions in 2002, it has not demonstrated that the same quantity of VOC reductions (or NOx reductions) would be needed to achieve the ozone NAAQS, when the federal RFG program is removed from the SIP. The State should also put the air quality need in the context of attainment of a NAAQS, not just in the context of the 15% plan or reasonable further progress requirements.

¹ Section 211(c)(4)(A) provides, “[N]o State (or political subdivision thereof) may prescribe or attempt to enforce, for the purposes of motor vehicle emission control, any control or prohibition respecting any characteristic or component of a fuel or fuel additive...if the Administrator has prescribed under [section 211(c)(1)] a control or prohibition applicable to such characteristic or component of a fuel or fuel additive, unless State prohibition or control is identical to the prohibition or control prescribed by the Administrator.”

2. Analysis of alternative control measures: In reviewing alternative non-fuel measures, the State has looked to the ozone season of 2002 as the relevant time frame for comparing the reasonableness and practicability of such alternatives to that of the OFRFG program. Under current federal rules, New Hampshire is obligated to remain in the federal RFG program through December 31, 2003. The State should evaluate the reasonableness and practicability of alternative non-fuel measures with this time frame in mind, particularly given that it is already September of 2002. It should also compare the reasonableness and practicability of non-fuel alternatives with the attainment date for the relevant NAAQS in mind.

Additionally, when evaluating the emissions impact of non-fuel alternatives with this longer time frame in mind, the State should consider the impact of programs that may begin in 2004, including federal control programs, such as the Tier 2 vehicle emission and low sulfur gasoline control program.

3. Analysis of the emissions benefit of OFRFG: Assuming the State has demonstrated that, even with the implementation of all reasonable and practicable non-fuel measures, it will still need emission reductions to achieve a NAAQS, the State then needs to demonstrate that its OFRFG program will provide some or all of the needed emission reductions. The State should explain the control features of its OFRFG program and how these features achieve the needed emission reductions.